March 1931

Drug Markets

Established 1914

The Magazine of the Manufacturing Drug Trade

Editorials

Wanted-Confusion—We Grow Up—The Battle for Vitamin Control—Prices Will Rise—Opportunists.

Feature Articles

The Ambiguous Pharmacopoeia	227
Courageous Coty	229
Labels for Vitamins	231
Adapting a French Line	234
Wormwood	236
On the Air with Drug Control	239
Peruvian Drug Needs	241
Modern Drug Manufacturing	243
The Literature Says	247
Quinine in India	249
The Trend in Advertising Control	251
New Patents Reveal	255
Clary Sage	257
Some Modern Cosmetics	263
Extracting Crude Drugs	271
New and Non-Official	226
Ten Years Ago	226
Raw Material Markets	281
Drug Market Place	310
Buyer's Guide	212
Index to Advertisers	312

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Pussy-footing

American people are prone to abhor pussy-footing or indecision on the part of their political lights. Yet these same people think nothing of procrastinating in policies affecting their own business in the hope that "something will turn up" and relieve them of the necessity of taking definite action.

We maintain that drug trade manufacturers are as excellent as any group of people at pussy-footing. Note their lack of definite action concerning: Price maintenance; free deals; Food and Drug Administration; policies of A. M. A.; campaign for official prescriptions.

If any manufacturer will give us information tending to combat any of these trade evils, we will not reveal his name so he will not suffer the terrible damage that he anticipates.

VOL. XXVIII DRUG MARKETS, INC. NUMBER 3

PUBLISHERS

Publication Office, 28 Renne Ave., Pittsfield, Mass. Editorial and General Office, 101 W. 31st St., N.Y. City

Editor THOMAS R. FARRELL

Business Manager FRAZER V. SINCLAIR

PUBLISHED MONTHLY AT PITTSFIELD, MASS., SUBSCRIPTION PRICE, TWO DOLLARS A YEAR, IN ADVANCE, POSTAGE PAID TO ALL COUNTRIES, THREE WEEKS' NOTICE IS REQUIRED TO CHANGE SUBSCRIBER'S ADDRESSES, AND WHEN NOTIFYING KINDLY GIVE BOTH OLD AND NEW ADDRESSES; PRINTED BY THE SUN PRINTING COMPANY, PITTSFIELD, MASS. ENTERED AS SECOND CLASS MATTER, JANUARY 1, 1928 AT THE POST OFFICE AT PITTSFIELD, MASS., UNDER THE ACT OF MARCH 3, 1879.

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D&O
ESTABLISHED IN 1798

ESSENTIAL OILS
and Kindred Products

We offer

for all Pharmaceutical purposes

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180 Varick Street New York City

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{ Buyers' Guide }

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Magnus, Mabee & Reynard Inc.
Newport Chemical Works, Inc.
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Newport Chemical Works, Inc.
Plaimar, Ltd.
A. M. Todd Co.
Ungerer & Co.
United Chemical & Drug Corp.
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California Fruit Growers Exchange
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H. J. Baker & Bro.
Colgate-Palmolive-Peet Co
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Bond Mfg. Corporation
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White Metal Mfg. Co.
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INSIDE THREAD CAPS

Spring Stopper Co.

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Bond Mfg. Corp.
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Aluminum Seal Co.
Anchor Cap & Closure Corp.
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Stokes & Smith Co.
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F. J. Stokes Machine Co.

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Package Machinery Co.
Stokes & Smith Co.

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M M & R TERPENELESS ESSENTIAL OILS

Terpeneless Oils have their special field of usefulness and individual characteristics.

MM&R Terpeneless Oils fill the requirements in either direction.

Highly concentrated, economical and truly flavored, they are used wherever solubility, keeping qualities, flavor integrity and economy are required.

Manufactured from the highest quality selected Natural Oils, they embody the true odor value and flavor characteristic only of the best.

We recommend---

Oil Bay Terpeneless MM&R
Oil Bergamot Terpeneless MM&R
Oil Caraway Terpeneless MM&R
Oil Cloves Terpeneless MM&R
Oil Ginger Terpeneless MM&R
Oil Juniper Terpeneless MM&R
Oil Lemon Terpeneless MM&R
Oil Limes Terpeneless MM&R
Oil Sweet Orange Terpeneless MM&R

Assist your purchasing department in buying to advantage by requesting the MM&R Catalog, Bi-Monthly Wholesale Druggists' Confidential Price Bulletin, and Special Price Bulletin for Manufacturers of Confections. All issued periodically.

MAGNUS, MABEE & REYNARD INC

32 CLIFF STREET
NEW YORK, N. Y.

M M&R MAGNUS

29 SO. CLINTON STREET
CHICAGO, ILLINOIS

Two Favorites ★ ★

that have helped make Anchor the leading closure manufacturer....

- Anchor never has had a one-closure mind. It backs no favorites. What is ideal for one product may be poorly suited to another. Hence we make and recommend 15 different styles.
- The two favorites shown here probably are the two best known Closures in the world—and yet that does not prove by any means that they are the ones to meet your requirements.
- To determine what is best for you from every standpoint—sealing qualities, cost, processing methods, packing routine, appearance, etc.—the proper procedure is to put the problem up to an organization with long experience and knowledge, and let them make their recommendations and give you their reasons.
- Anchor is always glad to render this sort of service, without obligation, naturally. Just let us know your product and your conditions—or better yet send us a sample of your present package—and we will reply with a specific suggestion.

Anchor Cap & Closure Corporation
Long Island City, N. Y. Toronto, Can.
Branch Offices in all principal cities

• • •

ANCHOR PRODUCTS

Anchor C Caps; Anchor D Caps; Anchor Amerseal Caps; Anchor Two-piece Amerseal Caps; Anchor Domed Amerseal Caps; Anchor Paragon Caps; Anchor Band Caps; Anchor A Clipper Caps; Anchor R Clipper Caps; Anchor Continuous Thread Bottle Caps; Anchor Continuous Thread Caps; Anchor Two-piece Continuous Thread Caps; Anchor Deep Screw Caps; Anchor Two-piece Deep Screw Caps; Anchor Molded Caps;

Sealing Machines; Pressure Processing Systems

CONSUMER-APPROVED CLOSURES
Anchor for every Packing Need

Nearest Approach to an All-Purpose Liner

Reason No. 3 why
REZIZTOL EXCELS:
It resists Moisture
Acid
Alkali

REASONS WHY
REZIZTOL EXCELS

1. **ODORLESS**
2. **TASTELESS**
3. ***RESISTS**
   Moisture
   Acid
   Alkali
4. **SEALS BETTER**

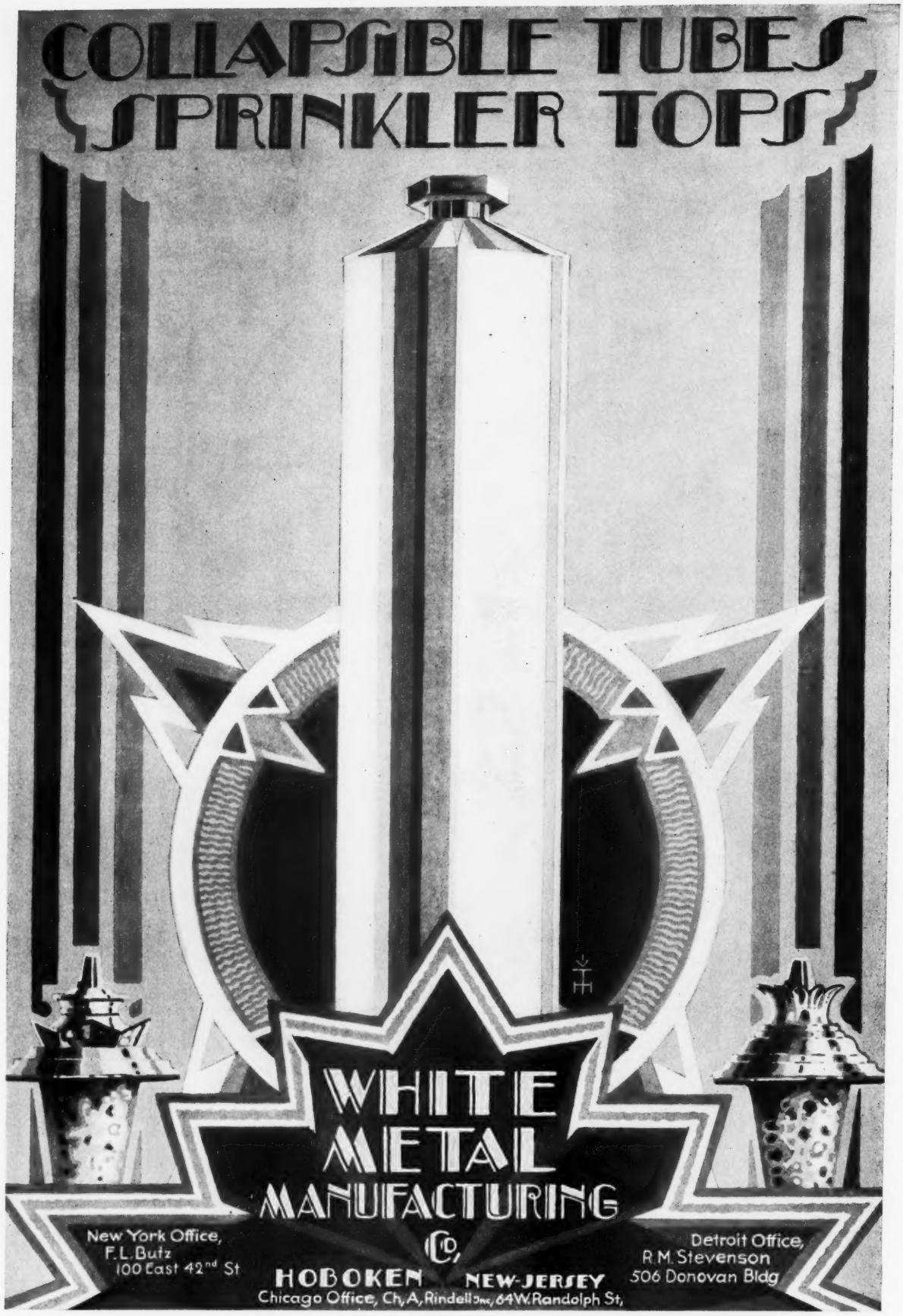
To meet commercial conditions in packing, storing and shipping products packed in glass, the cap liner must be resistant to moisture, acid and alkali.

Laboratory tests have shown that REZIZTOL meets these requirements for sealing a wide variety of products. REZIZTOL is the nearest approach to an all-purpose liner.

Our own laboratory, or that of any reliable cap manufacturer, will be glad to furnish samples or put your product under test with REZIZTOL.

General Felt Products Inc.

BUSH TERMINAL - - - BROOKLYN, N.Y.


COLLAPSIBLE TUBES
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WHITE
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CO.
HOBOKEN NEW-JERSEY
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F.L. Butz
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Detroit Office,
R.M. Stevenson
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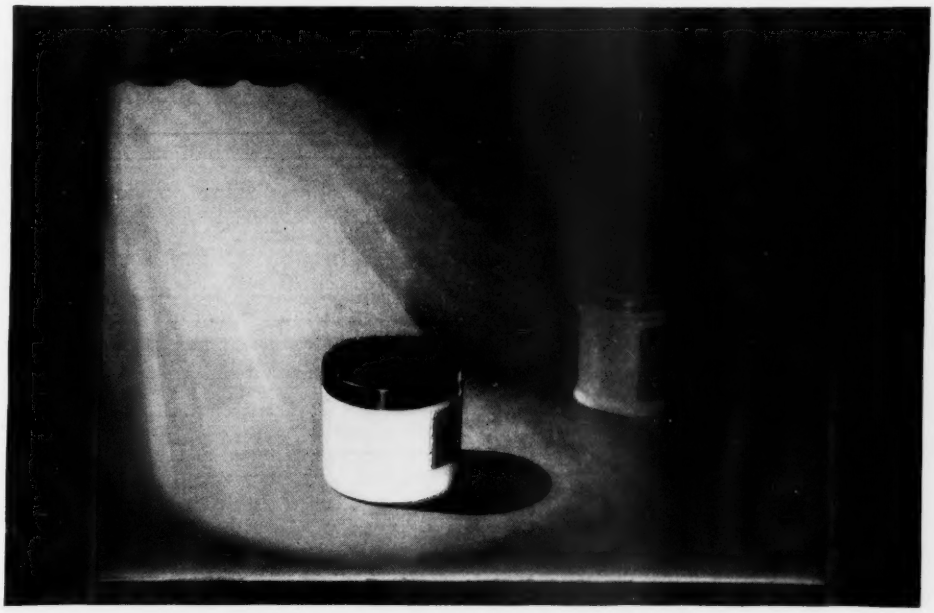
Chicago Office, Ch, A, Rindell Inc, 64 W. Randolph St,



Is your product in the spot-light *or back stage?*

Products garbed in the styles of yesterday cannot win the "spot-light" of conspicuous display in the smartly furnished shops of today. Unattractive packages are hidden from sight at the back of the shelves or in under-counter cupboards. Packages styled in the attractive modern manner are placed where everyone may see them.

Closures of lustrous, colorful Bakelite Molded will go a long way toward beautifying a container, be it jar, bottle or tube. The many colors and shades in which this material is made, make it possible to harmonize the color scheme of label and closure. Distinctive designs and trade-marks may be reproduced in every detail.

Additional advantages of Bakelite Molded Closures are their resistance to chemical action and the fact that they will not corrode nor stain. The cooperation of our Research Laboratories is at your service, to aid you in adapting these modern closures to your containers.

BAKELITE CORPORATION
247 Park Avenue, New York, N.Y. Chicago Office: 635 W. 22nd Street
BAKELITE CORP. OF CANADA, LTD., 163 Dufferin St., Toronto, Ont

BAKELITE

REGISTERED U. S. PAT. OFF.

The registered trade marks shown above distinguish materials manufactured by Bakelite Corporation. Under the capital "B" is the numerical sign for infinity, or unlimited quantity. It symbolizes the infinite number of present and future uses of Bakelite Corporation's products.

THE MATERIAL OF A THOUSAND USES

ACETPHENETIDIN

Dow Acetphenetidin U. S. P. possesses remarkable purity. It has a melting point of 134½° C. to 135½° C. which is higher than the U.S.P. standard. Its fine, white, crystalline powder structure is always uniform. It is odorless, has a slightly bitter taste, and is stable in the air. It can be depended upon for the desired results.

BENZOIC ACID

The exceptional purity of Dow Benzoic Acid U.S.P. is emphasized by the fact that it exceeds the U. S. P. standard both as regards melting point and ash content. It has a melting point of 121° C. to 123° C. and is entirely free from ash. Better results can be obtained by using Dow Benzoic Acid U. S. P. in pharmaceutical preparations, dentifrices, perfumes, seasoning tobacco, as a food preservative, etc.

A PARTIAL LIST OF DOW PRODUCTS

Acetphenetidin, U. S. P.
Acetyl Salicylic Acid, Granulation, 10% Starch (White, Green and Pink)
Acetyl Salicylic Acid, U.S.P. Powder or Crystals
Benzoic Acid, U. S. P.
Bromine, Purified
Chloroform, U. S. P.
Cinchophen, U. S. P.
Ferric Chloride, U. S. P., Solution or Crystals
Methyl Salicylate, U. S. P. (Synthetic Wintergreen)
Minor Bromides
Minor Salicylates
Phenol, U. S. P.
Salicylic Acid, U. S. P.
Sodium Benzoate, U. S. P.
Sodium Salicylate, U. S. P.
Strontium Bromide, U. S. P. IX

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

CINCHOPHEN

A special manufacturing process insures the uniform quality that is maintained in Dow Cinchophen U. S. P. It is supplied either in the form of small, colorless, needle like crystals, or white powder. This product is odorless, has a slightly bitter taste and is stable in the air.

SODIUM BENZOATE

This widely used Dow product conforms with all of the U. S. P. requirements, and its uniformity is particularly useful to manufacturers of pharmaceuticals, antiseptics, foodstuffs and tobaccos. In addition to the usual fine, white, granular powder, it is supplied in a finely pulverized form for use in the solid state for medicinal purposes and for butterine, oleomargarine, jams and jellies.

TRADE DOW MARK

We will gladly quote on your requirements and supply samples on request.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

What the microscope reveals

. . . *Users' experience confirms!*

Pure . . . snow-white . . . smooth . . . grit-free. That's how SNOW TOP *looks and feels.*

But the verdict of keenest eyes and most sensitive fingers cannot be final in a matter so vitally important. So . . . let's peek through the microscope.

700 diameter magnification reveals what you see here: fluffiness of particle; absolute uniformity of physical character. Ten, fifty . . . a hundred samples show precisely the same characteristics *as the first. Never do they deviate, even in the slightest degree, from specifications.*

And equally uniform are SNOW TOP'S *white "color", high absorptive* properties, and binding power. Regardless of what you pay, you can buy no more than SNOW TOP delivers.

[This American product is specially manufactured. By every recognized test it measures up to the highest standards, PLUS a marked advantage in service and price.]

Sample on request. Address the

Industrial Chemical Sales Co., Inc.

230 Park Avenue, New York City

SNOW TOP

PRECIPITATED CHALK

THERE'S NONE BETTER THAN «SNOW TOP»

CRETA PRÆCIP U. S. P.

SNOW TOP is supplied uniformly to your specifications as to bulk and absorptive power.

CHEMICAL SCIENCE raises industry to higher levels

CHEMISTRY and Chemical Engineering are keeping many an industry out of the red, can do the same for many others, will do it for all who utilize these great forces.

Every man in the drug and chemical field owes it to himself, his profession, his employers and his Country to maintain that leadership necessary to prosperity via Chemistry and the allied sciences.

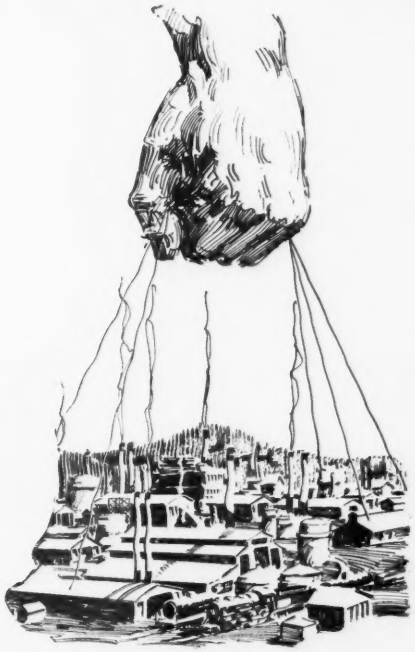
Ready to the hand of those for whom chemical science can do so much is this year's Exposition of Chemical Industries.

Viewed as a whole it will be a striking demonstration of Industry transformed by Science.

Viewed in detail, it is a post-graduate course without which previous education is hopelessly handicapped in dealing with the needs of the day.

Available at this great national institution of learning will be opportunities to discuss your interests with hundreds of specialists in attendance to serve you.

Exhibits,—visual, tangible, comparable embodiments of progress—include special groups and sections for Laboratory Supplies and Equipment, the Natural Resources section, the section for Material Handling, Packaging and Containers. Exhibits correlated with the various phases of manufacturing include Chemical Engineering Equipment, Instruments of Precision, Chemicals, Chemical Products and a wide variety of Technical Products used in the arts and industries.



Attending this Exposition yourself is not enough. Bring from your organization those who have operating responsibilities requiring knowledge of modern methods, machines, materials. And bring those whose "sayso" counts when newer, better equipment is needed. They'll be glad they came. So will you.

13th Exposition CHEMICAL INDUSTRIES

Management International Exposition Company

A quality control conference in the History & Specifications Department of one of our plants. These meetings are held every morning by the men in charge of each job.

Guarding QUALITY

' ' ' to DECREASE your packaging costs

' ' ' to INCREASE your sales

The reputation for uniform quality enjoyed by Owens-Illinois bottles and glass containers imposes a heavy obligation upon the organization that makes them. This obligation is made possible of fulfillment by two great interlocking systems of quality control. One is our Industrial Laboratory at Alton, Illinois, where large-scale tests are made to determine the best materials and machinery for the manufacture of our glassware.

The other is the network of History & Specifications Departments operating in each of our plants. The function of each History & Specifications Department is to control quality *during the actual manufacture of the container* and to so cooperate with every inspection service as to insure that the finished containers will meet our customers' and our own specifications. Owens-Illinois Glass Company, Toledo, Ohio.

Write for our new booklet "Guardians of Quality In Your Glass Containers." It shows you how we are continually working to produce better and better containers for your product.

BRANCH OFFICES—ATLANTA, Ga., *1001-2-3 Norris Bldg.* - - BALTIMORE, Md., *1501-2 Bromo-Seltzer Tower Bldg.* - - BOSTON, Mass., *430 Park Square Bldg.* - - BUFFALO, N. Y., *1133-5 Marine Trust Bldg.* - - CHICAGO, Ill., *402 West Randolph Street* - - CINCINNATI, Ohio, *800-4 East Third Street* - - CLEVELAND, Ohio, *218 Engineer's Bldg.* - - COLUMBUS, Ohio, *Southwood and 19th Streets* - - DALLAS, Texas, *407-8 Mercantile Bank Bldg.* - - DENVER, Colorado, *306-7 Jacobson Bldg.* - - DES MOINES, Iowa, *330-1 Insurance Exchange Bldg.* - - DETROIT, Michigan, *3-112-113 General Motors Bldg.* - - INDIANAPOLIS, Ind., *1233 Meyer-Kiser Bldg.* - - KANSAS CITY, Mo., *2114 Central Street* - - LOS ANGELES, Cal., *306-7 Western Pacific Bldg.* - - MEMPHIS, Tenn., *1004 Dermon Bldg.* - - MILWAUKEE, Wis., *301 Watkins Bldg.* - - NASHVILLE, Tenn., *1005 Stahlman Bldg.* - - NEW ORLEANS, La., *608-10 Tulane-Newcomb Bldg.* - - NEW YORK, N. Y., *1605-10 Park Murray Bldg.* - - PHILADELPHIA, Pa., *925-27 Public Ledger Bldg.* - - PITTSBURGH, Pa., *1507 Arrott Bldg.* - - ST. LOUIS, Mo. *1402 Landreth Bldg.* - - ST. PAUL, Minn., *Robert and Indiana Streets* - - SALT LAKE CITY, Utah, *308 Dooly Bldg.* - - SAN FRANCISCO, Cal., *401 Young Bldg., 133 Kearney St.* - - SEATTLE, Wash., *905-6 Dexter-Horton Bldg.* - - TOLEDO, Ohio, *965 Wall Street*

OWENS - ILLINOIS

BOTTLES AND GLASS CONTAINERS

There's an Armstrong Closure for Every Need

IF you are looking for closures look over the Armstrong Line. It includes practically every type of closure that modern glass packing demands. From no other single source of supply can you obtain as complete service as Armstrong offers in closures for bottles and jars.

For beauty and distinctive appearance there are Artmold Caps—molded in attractive designs and colors; Embossed Top Corks—corks with varicolored, embossed hardwood tops; Du Pont Cellulose Caps and Bands—used as the finishing touch over other closures.

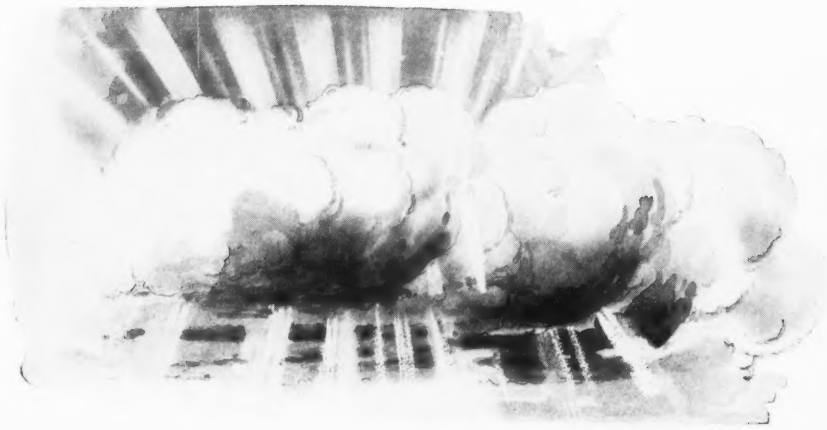
For utility purposes there are Corks of every description, all kinds of Daubers and Applicators, Rubber Stoppers, Discs or Liners of various types, Crowns, Bungs, and Plugs. On all of them you are assured of prompt, intelligent Armstrong service.

Expert advice based on over 70 years of experience in manufacturing and selling closures is yours for the asking. Without obligation you are invited to submit your problems—not only of sealing but of appearance and design as well—to Armstrong's closure specialists.

For this service, send sample bottles and full details of your problems to Armstrong Cork Company, 913 Arch Street, Lancaster, Pennsylvania.

Armstrong's Closures

CORKS OF ALL KINDS . . . ARTMOLD CAPS . . . EMBOSSED TOP CORKS . . . DAUBERS . . . CROWNS . . . CELLULOSE CAPS
CELLULOSE BEVERAGE BANDS . . . APPLICATORS OF ALL KINDS . . . RUBBER STOPPERS . . . CAP LINERS . . . BUNGS



WIND . . . clouds . . . rain. The sun can't shine all of the time. Sometimes a shower is disconcerting. But most of us have learned to take them "matter of fact", get out the raincoat, umbrella and rubbers and go on as usual.

It's different when business clouds up and rains. Too many people turn up their coat collars, scurry for shelter and stay there until it clears up Not an umbrella in the crowd.

Babson tells us, without metaphor or other tempering device, that these same clouds have been blowing up every seven years for the last fifty or more years. From observation and study he can almost name the day and hour. You'd think by now we'd know what to do about it.

But no, another seven years rolls around, and we are again caught out in the open without so much as a walking stick. This isn't intended to be an illustrated lecture on the errors of the past. Anybody can talk on that subject with less than a minute's preparation. But obviously the more of us that think, talk and act upon this problem the sooner something will be done about it.

Nobody has asked my opinion (exactly), but I don't think that this condition is likely to be corrected by an act of Congress. At least not in the next seven years. It's something for every business man to help correct . . . individually . . . by cooperation with business men in his own industry . . . and finally by cooperation with all industries.

Dart Smith

PHOENIX-HERMETIC COMPANY
Metal Caps for Glass Packages
CHICAGO NEW YORK

Offices: New York, Philadelphia, Boston, Rochester, Chicago, San Francisco, Los Angeles, Cleveland, Cincinnati, St. Louis
Plants: 2444 W. 16th St., Chicago; 14th Ave. and 38th St., Brooklyn

PHOENIX *Metal Caps*

WHEN production is an important factor (and when isn't it?) in the sealing of your packages, the continuous thread metal cap is admittedly superior to many of the other forms of threaded closures.

The flexibility of the metal combined with the continuous thread type of construction of the Capitol Cap adapts it to mechanical application—particularly if the equipment is of the hopper-feed variety.

The liners will not fall out. And, the flexibility of the metal prevents the cracking of walls or stripping of threads. Nor will they "back off" the threads of the bottle once they have been applied.

This means uninterrupted, trouble-free production — and, above all, absolute surety of seal.

PHOENIX Capitol Cap
Flat Top

Then, too, you are not limited to black or somber colors when a PHOENIX *Metal Cap* is used. They may be decorated in glossy coatings, translucent lacquers or brilliant crystal finishes, of almost endless variety, to harmonize with your label. Shades and tints which may be matched time and time again, no matter how often you may have occasion to reorder.

Or, if you prefer, your trade mark or other insignia may be accurately reproduced in full color.

PHOENIX Capitol Cap
Domed

Capitol Caps may be provided either flat top or domed. Samples, complete information regarding the correct liner for your product and prices will be promptly supplied on application.

DESIGN AND COLOR
POWERFUL IN BUILDING SALES

DESIGN . . . to interest; Color . . . to attract the eye; to suggest strength; Thorough workmanship too, typical of our tubes for years . . .

These powerful aids are put to work by the leading makers of tooth pastes, shaving creams and many other products in whose sales our tubes play an important part.

We have ideas that will help your products too. Our art department will gladly prepare appropriate designs and color combinations for your approval.

NEW ENGLAND COLLAPSIBLE TUBE COMPANY

17-35 Waller St., New London, Conn.
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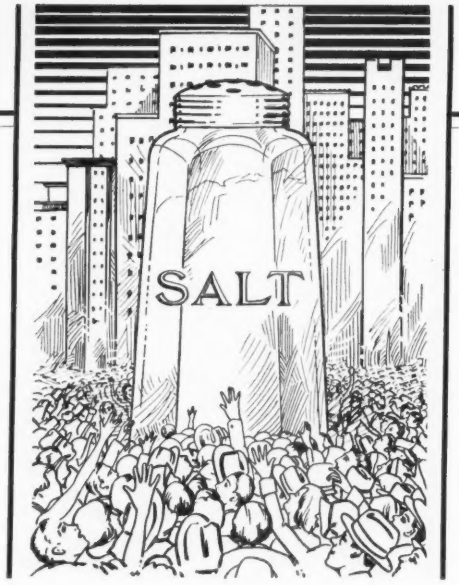
NEW ENGLAND COLLAPSIBLE TUBES



In Dire Need of Iodine --- So They Put It In Salt ---

IN THAT section of the United States known as the *Goitre Belt*, the soil supplies practically no Iodine. The vegetation and drinking water of this section are so deficient in Iodine that practically the entire population in times past was predisposed to goitre. Even today it is estimated that more than half the population of two great cities in this belt is afflicted in this way.

One of the State Boards of Health, realizing the dire need for relief, recommended that Potassium Iodide be added to the salt used for family consumption—salt being a product used by everyone and only in limited amounts, so that there would be no danger from an overdose of the needed element, iodine. Many manufacturers responded by marketing iodized salt. This has done much for the relief of goitre. State Agricultural Departments now recommend an iodized diet for poultry and live stock as well.

It was in 1870 that MALLINCKRODT first began manufacturing **Iodine** and **Iodine Derivatives.** We now manufacture fifty-one such products: Iodine Tincture, Iodoform, Potassium Iodide, Sodium Iodide, Thymol Iodide, etc., etc.

During all these years we have accumulated experience that is invaluable to industry and pharmaceutical manufacturers concerning the uses of Iodine and Iodides. Possibly we can help you. Consultation is welcomed. Write our nearest branch.

MALLINCKRODT CHEMICAL WORKS.

St. Louis
New York

Mallinckrodt

Philadelphia
Montreal

FINE CHEMICALS

Drug Markets

Vol. XXVIII MARCH 1931 No. 3

Wanted—Confusion

PRIOR to the present period of readjustment, manufacturers in the drug trade were bent on the use of unique schemes to place them on top of the heap in the mad rush for volume. In addition to the older tricks in merchandising such as the free deal, the preferred account, etc., which had failed of their advantage when they developed into common evils, manufacturers apparently stayed awake nights trying to give away profits—or really to cut prices—in some manner in which the extra discounts would stick to the hands of the wholesalers and retailers and not be simply passed on to the public with disastrous results. The present era of decreased buying power arrived with manufacturers still trying to invent new schemes instead of adopting sound merchandising policies.

THE general trend of sales departments during the past several years has been to relegate policies to the background or to shoot them full of holes with exceptions. Thus varying terms as to cash discounts, free goods, price maintenance, cooperative advertising, and what-not are to be found on the books of many of our leading companies.

CERTAIN manufacturers are now finding that these schemes present unpleasant problems at a time when such problems are more difficult to handle in a satisfactory manner. But still we find manufacturers who attempt to meet a sharp decline in business during 1930 with *new* and *better* schemes.

HOW far better it would be for the drug trade from top to bottom if the present period were used for a general housecleaning of those methods that either discriminate unnecessarily or else assume that the customer has the mind of a child and can not see behind the curtain of memberships, dividends, extra for non-specified order preference, etc. Extra five, ten, or 15 per cent from several houses, together with all manner of free goods must throw the retailer into confusion as to just whom he will really prefer. Perhaps confusion of the retailer is the real objective.

We Grow Up We are indeed astounded at the stupid statements made by W. R. M. Wharton, Food and Drug Administration, in his radio talks on proprietary medicines. Mr. Wharton's talks have been part of a so-called educational program to enlighten the public on the reading of labels on foods and medicines. We do not question the right of the Administration to use every means at its command to protect the public against obvious fraud; but we do seriously question the right of the Administration to attempt to blast to smithereens the confidence of the public in the efficacy of proprietary medicines.

Because a scientist should desire to drop some of the technical terms common to the medical profession and use the word "bugs" to convey bacteria, he must be a fake. Because a proprietary medicine manufacturer makes the statement that his product is the result of years of research, he must be a fake. Because a manufacturer states that his product is used by a large number of physicians, his product must be worthless. Because a manufacturer states that his product has been used by a certain physician during many years of practice, he must be regarded with suspicion. Good heavens! what a cynical world we will live in when these reformers get through. And what a hard time anyone with a new product of merit is going to have when he attempts to state the truth and everyone says "Our Government has convinced us that you are a liar."

But quite aside from these obviously unjust statements, comes the grand climax of all this trash when Mr. Wharton concludes his talk by telling the listener to ask himself (or herself) if the object of the manufacturer in making his claims is not to induce the reader of the claims to buy the product and thus enrich the manufacturer.

Yes, Dear Mr. Wharton, the reputable drug manufacturers of this country are in business for their health. They have no desire to realize a profit by selling you products that will aid you in maintaining or recovering your health. We live in a world that is guided by a huge majority who think only of how they can give things away with no thought as to where they shall get the things that they are to give away. We have been wrong to think that the fierce competition in the drug industry was inspired by a desire for personal fortunes, but we see it all now. We had never outgrown the morals of the terrible tales of our childhood such as those of the wolves in Little Red Riding Hood and the Three Pigs, instead of being guided by the stories of our later years when we began reading Horatio Alger, and Dick Merriwell.

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The Battle for Vitamin Control Ranking with Thermopylae, the Second Battle of the Marne and the Battle between the Tube and the Jar, is the new, unremitting struggle now being waged for vitamin control. The particularly devastating nature of this encounter is due to the fact that here is a battle within a battle, in fact, a battle with a dual personality.

The little-publicized, inner struggle is the one to control the vitamins themselves, no easy task as any authority will tell you who has tried to isolate and keep that very elusive Vitamin C. No sooner do they think they have him cornered at last, when suddenly he disappears into thin air. Vitamins A and D, on the other hand are fairly amenable to intelligently applied persuasion.

The outer struggle is the one being waged between the drug industry on the one hand and the food industry on the other, for the privilege and profit of selling vitamins. The drug industry came into the field because foods had failed as a means of supplying the human organism with the needed vitamins, as proved by the statistics on rachitis, rickets, scurvy and undernourishment generally, even among people generally considered well fed. The drug industry met the need for vitamins by presenting them in palatable, concentrated forms the while the dieticians were vainly prescribing spinach. As foods have failed to meet this modern problem, it would seem the part of wisdom for the food industry to remove the merchandising emphasis from the vitamin content and put it back on taste, odor and appearance, which is, after all, the reason most of us like what we like to eat. Particularly does it seem the part of wisdom because the drug industry has already conquered the problem and supplied the need.

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Spring conventions start in April with the American Manufacturers of Toilet Articles, followed in May by the American Drug Manufacturers' Association, and the Proprietary Association, and in June by the American Pharmaceutical Manufacturers' Association, not to mention the Chemical Exposition which takes place during the same week as the meeting of the A. D. M. A. Looks like a very busy Spring for suppliers to drug trade manufacturers.

Opportunists Drug manufacturers generally are too apt to accept conditions as they are without any real concerted effort to change them. Witness the lack of real effort to eliminate the free deal, to get rid of the silly notion of the Food and Drug Administration that only specifics can be labeled with disease names, to combat the propaganda of the retail trade on the prescribing of only official preparations. There are many other outstanding trade evils against which no definite action has been taken.

It seems that too many manufacturers are of the belief that they can act in an opportunist manner and take advantage of the evils. They feel that they can always shape their manufacturing and merchandising so that these evils will work greater detriment to those manufacturers who are not so versatile and flexible. Did not a very large number of manufacturers relegate a large part of the official preparations to the background of their production when prices broke on these? Did not they successfully market specialties after the manner of proprietary manufacturers but more ethical in nature? Now that official preparations are being pushed by the retail trade can they not join in this parade? They might injure the market for the specialties they have produced, but the business will be gotten in one way or another.

Perhaps manufacturers are right in their manner of shifting about and grabbing for every opportunity that presents itself whether or not it fits in with the policies and traditions of the firm. But it seems to us that an opportunist does not have a very long active life. We believe that such manufacturers will eventually realize that every time they make a shift they create enemies in the trade among those who respected them for what they were before. It does not take many such shifts before a manufacturer is disliked by every group that he attempts to appeal to. While we believe that useless crusading is bad, we should think that those manufacturers who would take a definite stand on problems of importance to the trade, and then stick to the policy until there ceases to be any controversy over it, would gain something that can be gotten in no other way.

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Offhand it sounds fantastic to believe that a business could be built up in five and ten cent toilet preparations that is increasing in a geometric ratio and has forced the drug stores to request larger sizes for their trade. Of course this manufacturer is attempting to grow in the right direction—up instead of down.

Prices Will Rise When markets for raw materials become demoralized, attempts to stabilize them are regarded by buyers as little short of ludicrous. Yet these markets do eventually stabilize, and quite often efforts on the part of those interested are directly responsible for the firmer conditions.

At the present time lemon oil as well as many other essential oils are in a deplorable condition from the point of view of the producer of these oils. Likewise Bourbon vanilla beans, tin, and numerous other commodities that are everyday necessities of drug trade manufacturers, are offered in such quantities that buyers close their eyes to the events that must certainly follow the over-production of products to such a point that they sell below cost.

Particularly worthy of close attention are those products which are produced by cultivated annual crops. If it costs anything to produce these crops, and prices today are below cost, it is certain that production will be greatly curtailed. Curtailment of production must of necessity mean a steady decrease in the surplus depressing the market, with the result that firm conditions and higher prices will rule.

There is hardly anyone who believes that prices of commodities are going to snap back to where they were a year and one-half ago. There is no positive assurance that the prices of early 1929 will be reached for many years to come if they will ever be reached before some major change such as the World War. Labor in producing countries will probably have to work for less, due to a real curtailed demand for most products the world over. We may have settled to a lower scale of natural commodity prices to rule for a long time to come.

But prices must rise from the depressed levels in effect today. It is certain that the readjustment that must take place in the production of these products will force an appreciable rise. Although production costs might be reduced by lower wages for labor, the absolute ridiculousness of present prices of a number of commodities being equal to or close to the actual cost of shipping the goods plus the duty, if any, clearly indicates that at least some products are being sold for what they will bring regardless of any production costs and regardless of whether they can be replaced at close to present values six months from now.

Pharmacopoeia Standards

Although clarification of the language of the Pharmacopoeia is such an obvious task of the revision committee that it needs no comment, the fact that the chairman of the revision committee and the chairman of a subcommittee can take widely divergent views as to the meaning of a paragraph written by the subcommittee in question shows how sorely such clarification is needed.

If exemptions are to be allowed in the Pharmacopoeia for substandard drugs in the preparation of official preparations, the revision should state this fact clearly. There is no reason for shifting the responsibility for such action to the shoulders of the Food and Drug Administration or the manufacturers unless those who bear the responsibility also bear the responsibility for compiling the Pharmacopoeia.

Certainly no exemptions are necessary in the Pharmacopoeia for other than official preparations although it seems that such exemptions were in the mind of the subcommittee when the ambiguous paragraph was drafted. It is not surprising that the chairman of revision is of the belief that the exemptions apply to official preparations.

We are of the belief that if the Pharmacopoeia is to mean anything in its attempt to formulate proper standards, it must set standards that can and must be met under all circumstances without exemption. Exemptions are quite unnecessary in the face of the right and duty of the revision committee to issue supplements changing any provisions of the Pharmacopoeia at any time during the life of any revision.

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{ Ten Years Ago }

From our pages March, 1921

U. S. Industrial Alcohol Co., 27 William St., New York, has awarded a contract to the George A. Fuller Co., for the erection of its proposed new plant at Grand st., Maspeth, L. I. The works will comprise two brick and stone buildings, estimated to cost about $500,000 with machinery.

The mercury situation continues dull with prices weak and inclined to be shaded by some sellers. Improted metal is in good supply with holders pressing for sale at $46 and $47 per flask American metal is quoted nominally at $50 per flask.

The Dow Chemical Co. announce the production in their Midland plant of ethylene glycol and dichloroacetic acid, which now is made for the first time in America.

Among new incorporations for the month was that of E. M Javitz & Son Corp., Manhattan, capital $10,000, drugs and chemicals.

• • • New and Non-Official • • •

Do You Know That

Squibb has exclusive rights in the drug trade to a trick safety match, shaped and lettered like tubes of Squibb Shaving Cream, and Squibb Dental Cream.

The Phillip's Milk of Magnesia ad headed "Mothers—Danger!" was inserted in daily newspapers by mistake and immediately withdrawn. Officials of the company claimed that they had not O. K.'d it, that the agency had inserted it without instructions.

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Trade Opportunities

A famous scientist states that practically all revolutions occur during the winter. He attributes this to a lack of fresh fruits and vegetables resulting in an unbalanced diet and consequent lack of vitamines. What a chance for a shrewd merchandiser to sell cod liver oil and cod liver oil concentrates to the established governments in South America as a form of insurance against revolution.

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The Retort Courteous

We award the palm of the month to Listerine's radio campaign which has been emphasizing that, "Listerine needs no troublesome dilution like harsher antiseptics." We nearly swallowed our gargle when these words floated over the air.

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Yo, Ho, Ho and a Tube of Rum

We note that the tendency in tooth pastes is toward a variety of flavors. We can hardly wait for the brandy flavored one.

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An Alarming Situation

Impressed by the stories of depression and hard times, a friend of ours decided to save the price of a doctor's fee by letting his druggist prescribe for him. He told the druggist that he felt kind of sick and found it difficult to get up mornings. The druggist sold him an alarm clock for 98 cents.

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It Pays to Advertise

When Lucky Strike's net exceeded Camel's by some eight million dollars, Camel officials decided that they had not spent enough for advertising, their 1930 budget having been consideraby lower than the twenty million spent by Lucky Strike during the same period. Secure in first place, Camel's advertising had lacked volume, become self-satisfied. Reduced to second place, Camel had an advertising shake-up, spent $850,000 in the first week of a new vast campaign.

Advertising prospects please take notice!

• • •

Headlines of the Month

"Breath Takes a Holiday"—Listerine. *"30 Seconds Each Night"*—Squibb Liquid Petrolatum. *"That Bedtime Cigar Needn't Keep You Awake"*—Phillips' Milk of Magnesia.

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Maybe We're Wrong

Gas Knock Measured by Heptane—*Headline in Daily papers.* Ha! said the Man Who Reads as He Runs, new competition for Sal Hepatica.

The Ambiguous Pharmacopoeia

Dr. E. Fullerton Cook, Chairman of Revision, who interprets the U. S. P. in a different manner than Dr. Newcomb says was the intention of his subcommittee

Prominent members of the U. S. P. Revision Committee can not agree upon the meaning of U. S. P. regulations. The matter must be settled before the new revision now in preparation is issued.

THAT those responsible for the revision of the U. S. Pharmacopoeia are unable to agree as to what is meant by certain requirements of the Pharmacopoeia is a surprising fact. Yet two such prominent members of the Revision Committee as Dr. E. Fullerton Cook, Chairman of Revision U. S. P. X and XI, and Dr. E. L. Newcomb, Chairman of Sub-committee on Botany and Pharmacognosy, U. S. P. X and XI, are in utter disagreement as to whether or not the general notices of the U. S. P. permit the use of standard drugs in the manufacture of official preparations.

Full appreciation of the fact that a disagreement existed was to be had at the February meeting of the New York Branch of the American Pharmaceutical Association at which meeting Dr. H. H. Rusby delivered a paper in which he contended that proper interpretation of the Pharmacopoeia was to the effect that substandard drugs should not be used in the manufacture of official preparations.

It is contended by Dr. Rusby that there is no conflict between two paragraphs of the Pharmacopoeia, while Dr. Cook contends that one modifies the effect of the other. The two paragraphs in question are:

"Official preparations are to be made only from drugs that conform to the pharmacopoeial standards, definitions, and descriptions."—General Notices page 1, paragraph 5.

"The official definitions and standards for vegetable drugs apply to all forms in which they may enter commerce, whether whole, cut, ground, powdered, or otherwise prepared for use, unless specifically exempted in the monograph or admitted under authority for manufacturing or for a special purpose."—General Notices, page 4, Vegetable Drugs, paragraph 1.

Dr. Rusby's interpretation of the pharmacopoeia as revealed in these two paragraphs is best given by an extract from his paper:

"I therefore submit that the paragraph in question (that under Vegetable Drugs) (a) refers only to the physical forms of the drug and not to its quality and (b) that the "manufacturing purposes" referred to does not include the manufacture of any official gelenical preparation."

It is Dr. Cook's contention that this paragraph was written into the general notices under vegetable drugs to provide for a supply of crude drugs when it is not possible, because of climatic conditions and other influences, to get material fully conforming with U. S. P. specifications. Dr. Cook points out that the Food and Drug Act does not insist upon U. S. P. standards, but merely insists that drugs be properly labeled as to strength and purity. He furthermore insists that this paragraph has been interpreted by article 30 of regulations to enforce the Food and Drug Act which permits the use of substandard drugs in the manufacture of official preparations.

Dr. Newcomb, chairman of the committee that inserted the paragraph in question, said that he was

certain that it was the thought of the committee in drafting the paragraph that all official preparations should be made from drugs that conformed with U. S. P. specifications, and that the exemptions applied only to lots of drugs that were to be used for preparation of other than official preparations.

Dr. Newcomb did not reveal his personal opinion as to whether or not substandard drugs should be permitted in the manufacture of standard preparations, but he sought to aid in a proper interpretation of the provisions of the present Pharmacopoeia as they are written.

The fact that the new revision of the Pharmacopoeia is now under way makes it necessary as far as possible to remove such ambiguities as appear above. It is for this reason that both Dr. Cook and Dr. Newcomb appeared at the meeting at which Dr. Rusby delivered his paper.

Many factors enter into the decision of the Pharmacopoeia Revision Committee with regard to exemptions from the specifications surrounding vegetable drugs. There is first the possibility that the specifications laid down by the revision committee might be out of reason as with the present specifications for gum benzoin. In such a case there must be an exemption if the official products are to be manufactured in this country in accordance with the U. S. P. Then there is the possibility that nature might fall down on meeting the specifications in the supplies available during any year. Or the U. S. P. requirements might be based upon the material available during certain years when these specifications might give no promise of being met during future years. Under such conditions a rigid adherence to the U. S. P. requirements would either deprive the country of the supplies of the official preparations made from the raw materials that could not meet the specifications of the U. S. P., or the country would be forced to allow imports of official preparations meeting the U. S. P. requirements but obviously prepared from raw materials that do not meet the U. S. P. requirements since nothing but substandard raw materials would be available.

But as a means of meeting these objections there is the right of the committee to revise standards at any time between general revisions as set forth in the final paragraph of the General Principles as follows:

"26. **Supplement**—It is recommended that the Committee of Revision be authorized to prepare supplements to the Pharmacopoeia, or lists of admissions or changes at any time they may deem such action desirable."

It is the opinion of some that this right of interim revision should be used to provide for relief from unreasonable requirements of the current revision of the Pharmacopoeia. Complaints are heard that the revision committee is shirking its duty when it does not act in this manner but rather shifts the responsibility for using goods below the existing standards to the Food and Drug Administration which is the only body with courage enough to relieve such an impossible condition.

As to Dr. Newcomb's statement that the exemption applied to the use of drugs for other than official preparations, some ask if such an exemption is necessary. The Pharmacopoeia, they believe, has no absolute control over other than official preparations. Surely, it is stated, because the pharmacopoeia lays down specifications for everything that is used by a pharmacist including water, sugar, and what-not, the specifications of the Pharmacopoeia do not necessarily apply to every use that these products are put. Surely no one is insistent that every one should drink distilled water merely because the pharmacist requires it for his use.

Surely there is no exemption necessary in the Pharmacopoeia to allow the use of cod liver oil of a low grade for tanning leather. Neither is there any necessity for an exemption to allow the use of many other products in channels that have no use for a copy of the Pharmacopoeia.

It is contended that while it may be right and proper for the Food and Drug Administration to require the filing of an affidavit and the posting of a bond by those importing certain products for technical use when the main use of these products is medicinal according to standards set up by the Pharmacopoeia, this action on the part of the Food and Drug Administration is open to question. After all there are many products produced in this country that must be U. S. P. when used in official products, but still technical grades are traded in freely and without restrictions. Chemicals such as epsom salts are one striking example. Still there is no care taken on the part of the Food and Drug Administration to require the filing of an affidavit and the posting of a bond for every lot of technical epsom salt that moves in interstate commerce or that in fact is imported.

Protection of the quality of drug products is certainly desired by all reputable manufacturers. Yet the question of using substandard drugs can only enter into the minds of manufacturers as justifiable when there is no U. S. P. material to be had. Perhaps there are some manufacturers who are human enough to want to be able to meet competition of those manufacturers who are using substandard drugs under exemption, but none of these would be in the least interested in this phase of the subject if there were no exemptions.

The question of economic waste enters largely into the subject, but here again there is reason why manufacturers should consider this as having any bearing on the desire of pharmacy to improve the quality of drugs and keep every lot of material to this standard. There is always the possibility that the revision committee will advance standards too rapidly in accord

(Continued on page 279)

Courageous Coty

Faced with the age old problem of discounts being passed to retailers with resulting cut prices, Coty cuts the wholesale discounts to ten per cent with certain exceptions, seeking to establish a stable retail market and bring sales effort to neglected products.

COTY'S recent move upon retail prices through lower jobber discounts, furnishes still another angle of approach to this perennial merchandising problem. Whether or not a flank attack of this sort upon the retail price cutter will prove tactically sound remains to be seen, but it cannot be denied that here is an evidence of real business courage.

Coty had for months made strenuous efforts to maintain prices, insofar as it was legally possible, by refusing to sell to chronic price cutters in the wholesale and jobbing trade. It is no secret that, during the past year, Coty's volume dropped considerably, and it was felt that some heroic remedy was necessary to encourage the retailer to push the Coty line. As things were going, the retailer who sold at the established price could do no business in the face of strenuous price-cutting on every hand.

Diminishing volume, reasoned Coty executives, was distinctly due to an unhappy retail situation occasioned by retail price cutting. This in turn was due to price cutting by the jobbers definitely encouraged, according to Coty, by discounts of 10 and 5 per cent—ample margin to allow some wholesalers to pass along 5, 5.2 and even 5.3 per cent to the retail trade. Thus the competition was vicious on both levels, wholesale and retail, and those cooperating with Coty's price policy had to meet the prices of those who were not cooperating.

Another primary cause of reduced volume was attributed by Coty officials to improper merchandising of the entire line, fostered and encouraged by the unsatisfactory price situation. In the first place, it was impossible, under prevailing price-cutting conditions for Coty representatives to merchandise the line properly. Prospects could get so much lower prices from jobber salesmen that Coty's direct representatives received little or no hearing. As a result, Coty's business consisted almost wholly of spot orders for fast moving items in the line. The jobber salesmen had no interest in selling the complete line, but were satisfied with taking orders for fast movers. Such policies, prevented Coty from merchandising on a complete line basis and did nothing to help the volume of sales.

This situation is more easily understood if the Coty line is analyzed from a merchandising viewpoint. The statement is made upon good authority that the Coty line complete consists of over 2,000 items. The average wholesaler, it is further stated, stocks from 200 to 300 of these items, of which 8 to 12 are fast movers.

It is self-evident, from an examination of these figures, that the jobber who cooperated with Coty was placed in a very unfavorable position. If he operated in good faith, stocked a high percentage of the line, and sold at the standard discount rate, he was doing business on a very narrow margin of profit. It has been determined that, on the basis of carrying from 200 to 300 items of the Coty line in stock, warehousing costs amount to 10.25 per cent to 10.75 per cent, which with an additional 4 per cent added for service, sales, and credit costs, resulted in a total cost to the jobber of from 14.25 to 14.75 per cent. As can be seen from these figures, the wholesaler discount of 10 and 5 per cent was none too large to afford a reasonable percentage of profit to the jobber who was really cooperating with the company.

On the other hand, the undesirables among the jobbers, from the Coty viewpoint, could concentrate their activity on the 8 to 12 fast movers, pass on 5, 5.2 and even 5.3 per cent to the retailer and still make a greater profit than the aforementioned cooperating jobber.

On January 1, therefore, Coty announced a new discount policy, which, although it has been unjustly criticised as discriminatory, is a courageous move and one that is economically sound and fully justified by the facts. It was then announced that jobber discounts were reduced to 10 per cent. Previously it is

reported that, through personal interviews and general meetings, Coty had reached a working basis with certain key jobbers, who had been cooperating, by which the latter were to recieve discounts variously reported as 10 and 5 and 10 and 7 per cent.

The jobbers thus selected to receive this higher discount were, in reality, appointed as special distributors or agents for Coty and paid a higher discount for services rendered to Coty. As the plan is still in the experimental stage, Coty has not deemed it wise to make public a list of these special distributors or of the conditions under which they have received their appointments. Thus it is still a matter of conjecture as to how much of the line the wholesalers in this group must keep in stock. But it is safe to assume, in view of the figures previously quoted, that they will stock at least from 200 to 300 items.

As has been pointed out, the jobber who really cooperates with Coty, is clearly entitled to the larger discount, since it does no more than give him a fair margin of profit. On the other hand, those jobbers who confine themselves almost wholly to the fast-moving items, can make a fair margin of profit at the 10 per cent discount rate because they have practically no warehousing costs. Furthermore, the low rate acts to prevent those classified as undesirables from passing on increased discounts to the retailer which is the prime factor in retail price cutting. In other words, the undesirables among the jobbers, to adopt that classification, are encouraged to eliminate themselves from handling the Coty products, which is just what Coty is aiming at.

Coty is making a real effort to face the facts in adopting this merchandising policy. The jobber who handles the entire line, including many slow moving items is obviously entitled to a greater discount than the jobber who confines himself to the 8 or 12 fast movers. Through this readjustment, the effort has been made to give every jobber a fair margin of profit, but at the same time, to discourage any passing on of discounts leading to retail price cutting.

The entire plan is based upon the premise that no merchandising system is sound unless the retailer makes a decent margin of profit. Granting that the enthusiasm of the retailer is necessary to successful merchandising, Coty is making the effort to secure this enthusiasm by guaranteeing the decent margin of profit through a sliding scale of jobber discounts, so adjusted as to give a fair margin of profit, if, and only if, the jobber does not cut prices. This is a courageous step and an entirely different approach to price maintenance, the success of which would prove far-reaching and lasting in its effects upon drug trade merchandising.

More Cod Liver Concentrates

Following the successful production and standardization of White's Concentrate of Cod Liver Oil, Health Products Company, Newark, N. J., have developed three new forms of cod liver oil concentrate which are to appear on the market during the next six months.

One of these three forms will be a palatable tablet similar to the present tablet but three times as potent in vitamin content. This tablet will have a vitamin A potency of 3,500 times the present U. S. P. standard. One tablet will be equivalent to one teaspoonful of a high potency oil.

Another form in which the concentrate will be marketed is a five minum capsule with a potency in vitamin A of 25,000 times U. S. P. strength and equally high in vitamin D potency. This product is now being used clinically and no evidences of toxicity have been discovered. The product is as potent in vitamin D as pure Viosterol.

The third form will be a solution of the concentrate in oil which will be of strength ten times the potency in vitamins A and D of a good grade of cod liver oil.

These three new products will be offered for acceptance to the Council on Pharmacy and Chemistry of the American Medical Association before marketing will take place. It is anticipated that the first two products will be available during July, and the third in the Fall.

A. D. M. A. Advertising Program

The program arranged by the committee on sales and advertising of The American Drug Manufacturers' Association, to be presented at their next annual meeting which will be held at the Cavalier Hotel, Virginia Beach, Virginia, May 4 to 7, is as follows: The Dentist as a pharmaceutical prospect, Frank B. Kirby, Abbott Laboratories; Industrial uses of pharmaceuticals, Walter Lee Rosenberger, Robert McNeil Co.; Sample requests from doctors and salesmen, A. M. Hayes, Hynson, Westcott & Dunning, discussion led by Fred A. Lawson, The E. L. Patch Co.; A survey of the hospital field, George Braun, publisher "Hospital Topics and Buyer" discussion led by James Upsher Smith, Upsher Smith Co.; Salesmen's compensation for jobbers' sales, Turner F. Currens, The Norwich Pharmacal Co.; Supervision of the sales force, Rolly M. Cain, Abbot Laboratories discussion led by M. Galbraith, The Upjohn Co.; Radio and moving picture advertising, R. D. Keim, E. R. Squibb & Sons discussion led by Don Merrell, Wm. S. Merrell Co.; What research has done for the doctor, Roger L. Adams, professor of chemistry, University of Illinois.

Schmitz Directs Stanco Ads

Val A. Schmitz, who recently joined the executive staff of Stanco, Inc., New York, flit, nujol and Daggett & Ramsdell toilet requisites, has been appointed general advertising director. E. B. Loveland will continue as advertising manager and A. J. Millard as assistant advertising manager. Both Mr. Loveland and Mr. Millard have been with the company for a number of years. Mr. Schmitz was formerly an account executive with McCann-Erickson, Inc., serving the Stanco account.

Health Products Promotions

William H. Berg, formerly general manager, is president and general manager of The Health Products Corp., Newark, N. J., manufacturer of Feen-A-Mint. J. De Cesare, in addition to directing sales, becomes assistant general manager, and Murray Breese, in addition to the position of advertising manager, takes on the duties of assistant sales manager.

Labels for Vitamins

In this field of drug products, still under intensive development, Drug Control is enforcing its ideas of what constitutes lawful label claims. We have asked this department for a statement revealing these ideas.

VITAMINS and preparations containing vitamins constitute a very live subject among federal food and drug law enforcement officials nowadays. While the Food and Drug Administration, Department of Agriculture, has no definite project afoot for dealing with vitamin preparations, as a class, under the food and drugs law, Department officials are contemplating increased activity before long, in the line of studying vitamins and preparations containing them. Additional funds have been made available by Congress for the Administration, for use during the claendar year beginning July 1, 1931, partly on vitamin work.

In this connection, Walter G. Campbell, in charge of the Food and Drug Adminstration, says that it is proposed to inaugurate facilities to do work on vitamins to determine whether products represented as containing vitamins are misbranded. The Department wants to keep abreast of the times, in order to regulate properly traffic in goods said to contain vitamins. Its object, as stated, will be to seek to prevent unwarranted, unjustifiable claims being made as to vitamin preparations.

The Department has been carrying on more or less research work as regards vitamins for several years, it is understood, but high Department officials feel that more work of this character should be done by the government. For one thing, they say, the subject of irradiation ought to be reviewed by department experts. The Department's attention has been attracted recently by a process of irradiation in which certain short rays of light may be filtered out by use of a screen, according to the claims of inventors or processors. Under this process it is claimed that the longer rays tend to increase very largely the vitamin content of the substance treated until it possesses added medicinal properties. This principle, it is claimed, would apply both to foods and drugs.

The Department of Agriculture, it is understood, wants to check up on such claims as the above. It plans to check up on claims made as to other preparations and methods as regards vitamins. The general plan for this work is to carry on research comparable with that done by the Department with regard to ergot. It is not proposed to engage in fundamental research work on vitamins in order to increase the general sum of human knowledge. That work is being left to private institutions engaged in research. Among others, manufacturers of drug and medicinal preparations are doing some of this work.

Meanwhile the Food and Drug Administration uses the U. S. P. dose of cod liver oil as the yardstick in considering the labeled claims of preparations alleged to contain Vitamins A and D. This use is understood to occur particularly as regards cod liver extract preparations. The Department asserts that the contents and dosage of preparations claimed with reference to preparations containing Vitamins A and D should measure up to the U. S. P. cod liver oil dose.

Some time ago the Department raised a question as to the right of certain pills to be labeled "cod liver pills" and to bear labeled claims with reference to vitamin content. The manufacturer of these pills carried on extensive and expensive research work into the questions raised with reference to his pills. Ultimately he is understood to have been able to show that his pills contained enough cod liver oil and sufficient Vitamins A and D to warrant his labeled claims and dosage. In other words, a dose of the pills would contain the equivalent of a U. S. P. dose of cod liver oil.

"A preparation containing Vitamin A and Vitamin D may be labeled to that effect," said Dr. J. J. Durrett, Chief of Drug Control. "It may be stated on the label that if a dose of it is taken, the vitamin dosage would be equivalent to cod liver oil, provided such is the fact. You can say 'rich in vitamin A,' for example, on a label if the facts warrant that statement. If a pill or tablet preparation contains Vitamin D, it may be stated on the label that the dosage recommended is equivalent to the Vitamin D content of cod liver oil.

But the statement must be accurate. You cannot say that a Vitamin D preparation is eqiivalent to so much cod liver oil. Because cod liver oil also contains Vitamin A."

Then Dr. Durrett enunciated the following additional principles controlling the labeling of vitamin preparations:

It is proper to label any vitamin preparation or mixture of vitamins as such.

It is not proper to label a preparation as "containing vitamins," or to use a similar expression, when only one vitamin is actually present in proper quantity.

"When you use such a label," said Dr. Durrett, "you imply that there is more than one vitamin present. I have a right to believe that a preparation bearing a label stating that it 'contains vitamins,' has in it all the vitamins, when such may not be the case. Clearly such a label is deceptive."

"What is the yardstick used in measuring labels on preparations containing Vitamins B and C ?" Dr. Durrett was asked.

He answered that the preparation must contain a true representation of either or both of these vitamins that may be present in fact.

Age and Condition Important

"You can say that a preparation contains what the body requires of Vitamin B, in the dosage recommended on the label," continued Dr. Durrett, you can not say that a preparation will supply the need for Vitamin C unless the dosage recommended is indeed sufficient for that purpose. The age of the patient and/or other factors may enter into these considerations.

"If you use a label stating that a certain preparation's dose will supply the body's needs for Vitamins B and/or C, you must not depent upon some item of diet or some medicine to make up a possible deficiency of them."

As is well known, many articles of food are being advertised and labeled with reference to their vitamin content. Over general advertisements the Food and Drug Administration has no control. The same principles are understood to apply in general to the labeling of foods for which vitamin claims are made that apply to vitamin drug preparations.

And if vitamin food preparations are claimed to have therapeutic or curative value, they automatically cease to be foods and become drugs, from the official standpoint at the Department of Agriculture. This was made plain by Dr. Durrett to Drug Markets.

In the realm of vitamins, foods preparations and drug preparations become considerably mixed, it would appear to the layman. Vitamin content is a strong selling point these days as to both classes of goods. The complications in this respect compare in general with the whole complicated scientific problem presented by vitamins. As Dr. Durrett says, "their study represents one phase of chemistry, biology, and a mixture of a group of sciences."

Dr. Durrett has been asked about opinions and testimonials of users of vitamin preparations. He replied that "they are not conclusive, but have a certain amount of weight with us and are always considered. We take clinical evidence into consideration," he added.

"What proof should a manufacturer give that his product contains Vitamin B ?"

"He certainly, before he labels it, should determine that it contains Vitamin B. We have tests that are accepted rather generally as being capable of developing that fact, and he should have his preparation submitted to that test. He cannot submit every batch to such tests, we know, but he can standardize his process of manufacture, and when he has had it standardized, and when he has it exact, he then can take average samples from it and determine that fact with a considerable degree of accuracy. That should be done.

"Sometimes processing will destroy potent materials. In some way the finished product will become devoid, or partially devoid, of the vitamin originally put into it. You cannot predict always, from the things that you put into a preparation, what the ultimate product is going to carry in the way of vitamin potency."

Time of Potency

"Suppose a product is potent for a time and after a time it becomes impotent. Can you seize it ?" Dr. Durrett was asked.

"The manufacturer in that instance will have to determine the time within which vitamin potency remains and he will have to limit his time for the product to stay on the market before it falls through decline below a certain level of potency," the Chief of Drug Control replied. "That principle is very well set out under the merchandising of serological preparations."

It was suggested to Dr. Durrett that scientific facts appear to demonstrate that Vitamin B is importantly related to bone building and that Vitamin A plays an important part in the promotion of growth. In view of this situation, he was asked if it would not be possible to use these terms on labels of preparations containing these vitamins, "notwithstanding the fact that perhaps some people would not understand what these questions had to deal with." Dr. Durrett replied:

"If I knew very little about vitamins (which is pretty close to the truth), and should see a preparation labeled 'this product contains Vitamin A,' and that 'it will produce growth', or that 'it tends to produce growth', if I wanted to get any larger than I am, and take the preparation, I am pretty certain I would be disappointed, because I have finished growing. For that reason there is a limitation to the tendency of Vitamin A to produce growth.

"My bones are getting pretty hard. The older we become, the more lime we get in our bones, and therefore the harder they are. We know that Vitamin B will tend to assist the deposition of bone substance,

but I don't want my bones any harder. I don't believe an extra supply of Vitamin B would make them much harder; it might.

"This type of label and this type of preparation presupposes that the individual needs these particular things, or these particular results, whereas he may or may not, depending upon his age or other conditions. We think that these terms are all-inclusive, and that they will not apply to all persons, and that they are not warranted on the labeling for that reason."

Seizures Made

The Food and Drug Administration has made a number of seizures of products for which cod liver oil or vitamin claims were made. In one case a quantity of alleged cod liver oil tablets were seized, on the ground of adulteration and misbranding. In that connection such labeled statements as "cod liver oil by extractives" were condemned by the Department because othe strength of the product was alleged to fall below the professed standard. It was declared to be misbranded because of claims with reference to "malnutrition, anemia, rickets, atony, etc."

In another case alleged "cod liver oil compound tablets" were condemned as sub-standard and sub-strength. The quoted name coupled with the picture of a fish was declared to constitute misbranding. A similar charge was made as to labeled statements that the product was good for "loss of flesh, malnutrition, convalescence after colds" etc.

In a third case a liquid preparation was declared to be adulterated because not of the proper strength "since Vitamin D, the antirachitic factor of cod liver oil, was present in the article to an extent not greater than would be found in 1/10 its volume of prime Lofoten cod liver oil. "The product was held misbranded also because of the claim that it was "equal in strength to 52 times its volume" of such oil.

Another shipment was seized on account of its label as a Norwegian cod liver oil for poultry. Upon analysis, the product was held to be below U. S. P. standard. It was therefore declared to be adulterated. It was also declared misbranded by bearing the name "cod liver oil." Ultimately it was released under bond on condition that it would be labeled "oil for animal feeding only, this is not cod liver oil," and on the further condition that it might be shipped out of the United States under supervision of the Department.

An alleged "dried emulsion of cod liver oil" was seized and condemned as adulterated because substandard, and misbranded on account of the name it bore and therapeutic claims made on its label.

During the year ending July 31, 1930 ,the Eastern District of the Food and Drugs Administration examined 2,763,620 pounds of cod liver oil offered for for importation, of which over 444,000 gallons were detained as adulterated with other fish oils, or as high in free fatty acid content.

Going back to the matter of research in connection with vitamins, some of the problems which authorities believe should be tackled are:—

The claim that ample supplies of Vitamins A and D may tend to prevent, if not cure, colds; the reported finding of investigators at the University of West Virginia that it is apparently possible to synthesize Vitamin A, in effect, when rats are fed on linoleic acid containing fats and a combination of iodine and ferrous oxide; and whether oil from other fish such as tuna, pilchard or sardine, salmon, herring, etc., may be satisfactorily substituted for cod liver oil as a source of Vitamin D for human use and for feeding animals. The Commerce Department, Bureau of Fisheries, and the Bureau of Chemistry and Soils, Department of Agriculture, have made some experiments that tend to show this. Already it is reported that one pacific Coast company expects to market half a million gallons of pilchard or sardine oil for animal feeding this season. More than 90 per cent of the cod liver oil used for human and animal consumption is claimed to be produced outside the United States. Discovery of a satisfactory source of Vitamin D oil in domestic fisheries is regarded as important. Whether the domestic fish oil will prove a statisfactory substitute for cod liver oil as a satisfactory source of vitamins for human consumption apparently remains to be determined.

Louis D. Etman, widely known and popular sales director in the drug and chemical industries, has resigned his position with J. T. Baker Chemical Company, Phillipsburg, N. J. Mr. Etman has not yet made known his future plans

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Chemical Exposition

The Thirteenth Exposition of Chemical Industries will be held at the Grand Central Palace in New York from May 4th to 9th, 1931.

Every second year this Exposition draws several hundred exhibits not only from the 40 odd chemical industries, but also from a large number of others which supply raw materials or plant and laboratory equipment used in chemical processes. No similar opportunity is afforded elsewhere in the world for studying the latest products or for comparing competitive products side by side.

The American Federation of Labor is opposed to the Capper-Kelley bill for the maintenance of resale prices on branded lines of merchandise or any similar legislation, Matthew Woll, vice president of the Federation, said at a recent luncheon of leading local merchants held at the Uptown Club.

Adapting a French Line

Lehn & Fink fit the Lesquendieu line of cosmetics to the American market in an ingenious fashion.

ADAPTING a French line of cosmetics to the American market is not a simple task, and while the American public is prone to accept anything in the perfume or toilet goods line merely because it is of French origin, many changes in the French policies and methods are essential to successful distribution in this country.

Some time back Lehn & Fink purchased the French house of Lesquendieu, a concern that had a most varied line of fine products extending through the entire range of cosmetics and toilet preparations all beautifully packaged. The line was so varied, in fact, that the merchandising of the entire line in this country was out of the question. There had been no restraint placed upon the number of items developed or upon the different types, sizes, odors, colors, etc., that make for an exceedingly large number of items.

But beside the problem of keeping the line within reasonable bounds as to the numbers of items, there was also the problem presented by the fact that Lesquendieu as it was formerly conducted, found it necessary to call each different item by a different name. Confusion could be the only result of such a policy in this country. On this problem, however, Lehn & Fink arrived at a very happy solution that marks a unique step in the naming of toilet preparations. The answer to this problem was found in the fact, cosmetics as marketed by Lesquendieu could be quite readily divided into four general groups. And each of these four groups was given a name to apply to all of the items in the group. The names for the groups were found by taking the most appealing name from one of the many items in each of these four groups. The result is as follows:

Tussey—name of the famous Lesquendieu lipstick —has been applied to cover a group including all make-up cosmetics, such as lip sticks, rouges, etc.

Eclador—has been selected from among the names applied to preparations for the hands and the nails to cover that entire division of the line.

Flozor—name of the famous Lesquendieu shampoo —has been selected as the name to be applied to all products of the line that are for use on the hair.

Farjoli—has been selected from the names of the creams and lotions to cover all products of this type.

Lehn & Fink, also producers of the famous Dorothy Gray line of cosmetics, well know the problems and difficulties that are attendant upon offering cosmetics that require, before their acceptance, the education of the buyer to a new type of skin treatment. The Dorothy Gray line is of this type, and while the Dorothy Gray line is most successful, it is not the desire of Lehn & Fink to introduce another high-priced line that requires this educational introduction to the public.

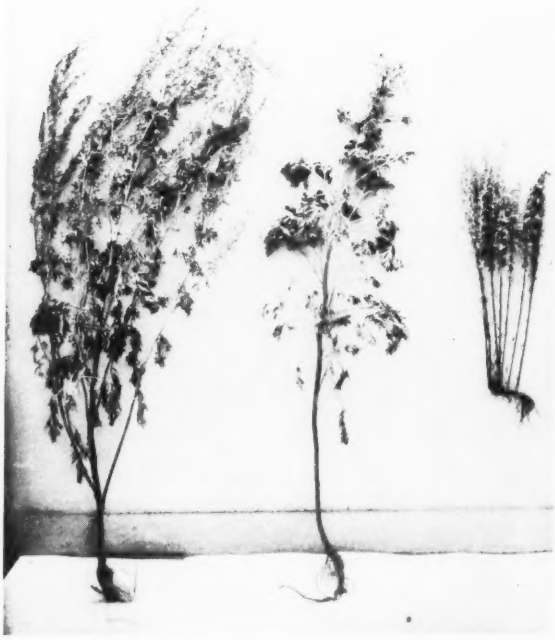
Consequently the Lesquendieu products will all be products that are well known and accepted by the public for odinary cosmetic uses. Creams, lotions, powders, rouges, etc. will present no new theory in the matter of skin treatment. The line will enter directly into competition with the products of other manufacturers that are already on the market and will attempt to secure its share of the market on the sound basis of quality products, handsomely packaged and moderately priced.

Under such a plan Lehn & Fink will be able to offer the products of a French cosmetic house at a price that should warrant immediate acceptance by the trade and by the public. And due to the fact that there will be no effort to start this line off in an exclusive manner, which is not only costly and difficult to start, but probably more expensive and more difficult to maintain, the moderate prices should be justified from a profit viewpoint.

As the illustrations show, the labels on all of the four groups in the line will be identical in form except for the name of the particular group into which the appears in question falls. The name "Lesquendieu" producton every package and the buyer has no difficulty in recognizing any of the products as being of the same origin.

Tussy—the name of the famous lipstick —is the name given to all make-up preparations

Eclador is the name selected for the products used on the hands and nails



Large wormwood is shown at left and small wormwood at right, both grown in Milly, near Paris

Wormwood

THE words absinth and wormwood connote many terrible things in the minds of a great number of persons throughout the world, particularly in countries like France, where the consumption of absinth or wormwood in the form of an alcoholic beverage ran into extremely high figures. A law forbidding the sale of absinth beverages was passed in France on March 16, 1915, and the reason is not difficult to find when it is borne in mind that the consumption of these beverages back in 1873 was 6,713 hectoliters, this figure having been increased to 400,000 hectoliters up to the time of the prohibition, just about sixteen years ago. Opinion differs as to just how harmful absinth or wormwood is, although results achieved by a beverage of the absinth family are said to be evident enough in other countries like Switzerland. Certain branches of medical opinion hold that it is not the absinth that does the harm, but other ingredients such as anise, for instance.

Whatever side may have the better argument, the fact remains that the absinth or wormwood plant is used both by the toilet preparations and pharmaceutical trades. The word absinth comes from the Latin through the Greek, *apsinthion*, which signifies that it is impossible to drink. Originally absinth as a beverage meant a drink made from wine and wormwood, which brings to mind the well-known word *vermouth*, recalling the Old English *wermod*, the Dutch *wermoet*, and the German *wermuth*. The actual etymology is reported in the Oxford dictionary as being dubious.

France raises a considerable quantity of the world's supply of absinth, particularly in the East (Doubs, Jura, Haute-Saône). A certain amount of it is also raised in the mountainous districts of Southern France, and successful plantations have been established in places like Milly, not far from Paris, in the Seine-et-Oise department. The field of small absinth shown in the accompanying photograph is representative of what

this culture is doing in sections like Milly, a center for aromatic plants of various kinds.

There are several kinds of absinth, but the main divisions usually cited are those known as large and small absinth, both kinds having the same quantities, practically speaking, although the small species gives a smaller yield of the essential oil taken from this culture. The scientific designation for large absinth is *Artemisia absinthum*, L., and it belongs to the so-called compositae. Essential oil of absinth, or wormwood, is extracted by means of distillation. The plant grows, according to Rolet and Bouret, as well as Piesse, in France, Corsica, Algeria, Spain and America. French essential oil of absinth is held to be of superior quality, according to certain authroities on the subject.

One of the accompanying photographs shows both the large and the small absinth, the latter being known as *Artemisia pontica*, or Roman absinth. The small absinth grows wild in many sections throughout France, particularly in the South, in the Alps and in the fields of the West. It also grows spontaneously in the marshes of the Saintonge. It is a very hardy plant, like the large variety of absinth and gives no seeds, even at full maturity.

It is interesting to note that animals browsing among absinth plants eat a certain amount of this plant, which, apparently, gives to their flesh and, in the case of cows or goats, to their milk a taste that is bitter and disagreeable.

The essential oil, obtained by distillation from the leaves and the branches of the large absinthe, *Artemisia absinthium*, L., is a green liquid, sometimes running to a bluish green or a light brownish green. Density: 0.905 to 0.955. Solubility: one volume of oil in two to four volumes of 90° alcohol. (Fouquet).

Other varieties grown in France are the so-called *Artemisia glacialis* L., and *Artemisia maritima*. These are used for vermifugal preparations and tonics of different kinds.

Then there is the *Artemisia Lercheana*, Ker. and Kir., which grows in the region below the Volga and in the deserts of Kirghiz. The mixture of its broken up branches, flowers, seeds, is known in the trade as semen-contra, or wormseed.

The flowers, the leaves and the branches of the absinth plant throw out a penetrating aromatic odor. All of the parts of the plant are very bitter, particularly the flowers, with the exception of the roots, which are not so bitter.

In the tissues of the plant are found three active elements: an essential oil, stimulant and toxic, and two bitter ingredients, one azotized, the other resinous. The resinous, bitter, elements are less stimulant, but more tonic.

Opinion differs as to the value of the dried absinth as against the fresh, some authorities holding that the dried plant even increases the desirable qualities through drying.

Whichever opinion may be the correct one, the fact remains that the absinth has therapeutic qualities which come under the heads of tonic, stimulant, stomachic, febrifugal, diuretic, vermifugal, emmenagoguic. Doctors also use the absinth in France to combat chlorosis, anaemia, and, generally speaking, in connection with all affections pertaining to the functions of the digestive organs.

In connection with the manufacture of liqueurs in France it has been noted that the large absinth gives to the liqueur being manufactured a more characteristic strength and bitterness. The small absinth, on the other hand, lends a certain perfume or agreeable

Field of small wormwood at left not far from Paris

taste, at the same time giving to the liqueur a fine green tint.

Through distillation, 100 kilograms of large absinth, green, gives 120 grams of crude essential oil; 100 kilograms of the small absinth rendering 38 grams. Rolet and Bouret suggest that dried absinth should be allowed to soak, or macerate, in water for at least twelve hours before being treated. They further point out that the best results, even though with less bouquet, are achieved by distilling only the extremities. This procedure gives a better product, it is said, and, at the same time, protects the health of those making use of the essential oil produced.

The crude essential oil taken from the dried plants, after soaking as suggested, is brownish in color. That taken from fresh absinth plants is dark green, and very fluid, getting brownish as it thickens. It boils at 180° C.

Purified essential oil of absinth, or wormwood, is blue or green, with a burning taste, a special, characteristic odor, strong and penetrating.

Rolet and Bouret give the density of the oil taken from leaves and branches as varying between 0.877 to 0.940. The oil taken from the flowers varies between 0.900 and 0.980, and it is dextrogyrate, causing the plane of polarized light ray to rotate to right.

Quite naturally the amount of absinth grown in France, for example, since the prohibition of absinth beverages, has decreased, although it may be stated that the increasing pharmaceutical and medicinal uses have kept this culture among the profit-producers for the growers and gatherers.

Generally speaking, both the large and the small absinth are not difficult to grow, although care must be taken to see that the soil utilized for the large variety is not too humid. In order to secure best results, the soil should be of average consistency, clayey-calcareous, deep, rich or well fertilized. Especially good results may be obtained if the large absinthe is planted on hillsides facing the South or the South-East.

The small absinth does not require a soil as deep as that for the large, and certain authorities are of the opinion that this culture produces more essential oil when grown in humid ground, or if the plants are gathered during rainy weather.

Large absinth is multiplied by means of seeds, the germination of which sometimes causes considerable trouble, extending over a very long period of time. Small absinth, on the other hand, as already stated in a previous paragraph, produces no seeds. This latter variety is, therefore, multiplied by means of plant offshoots on cultures at least two years old. Those taken from plants four years old assure the best results, and they are planted in the autumn or during March-April.

Large absinth is planted in the nursery during the period extending from April to July, in order to be able to place the plants in the autumn or springtime. In the Paris region, like Milly, for example, the sowing is accomplished in March-April and the planting of the young cultures is effected between October and March.

Cultural care of the absinth includes weeding, irrigating and protection from the severe cold, although, in general, it is a very hardy plant and is affected only by extremely adverse weather conditions.

A plantation of large absinth in France, from a profitable point of view, is supposed to last about three years. Absinth should not be planted on the same ground, but some other culture should be substituted, in order to renew the strength of the soil with particular regard to what the absinth demands and requires. This applies especially to the large absinth.

A field of small absinth may last longer than that, particularly if a rejuvenation process is carried out, this process depending upon the individual grower.

Gathering is feasible the second year, just as soon as the flower buds show themselves. In the Doubs district the gathering is effected in the period from middle June to middle July. At times a second cutting is resorted to, this occurring during August-September, but this yield is, of course, less abundant than the first cutting. Another disadvantage with the second cutting is that this yield very frequently presents drying difficulties, due to the fact that the plants contain at that time something like 80 per cent. water, whereas during the summer the wuantity of water usually does not exceed 52 per cent. (Rolet and Bouret).

After cutting, the absinth is allowed to remain on the ground until the evening, as this is said to aid the drying process, making it more rapid. It is suggested, however, that the plants should not be allowed to lie on the ground longer than one or two days, as this is liable to cause a deterioration in the quality of the plant when dried for the trade. This deterioration takes form in the loss of color and perfume or odor. Once dried, the absinth plant is rather brittle, and care is recommended in order to avoid undue breakage and consequent loss of clientele.

For the herborists the extremities, covered with leaves and flowers, are cut. These are then dried in the shade.

Leaves carefully sorted for quality are in great demand in France, and these leaves, carefully prepared and wrapped, may be conserved in a dry place for several years without fear of deterioration of any kind.

The way to choose a good grade of absinth in France is said to consist in seeing that the leaves are not spotted with yellow or black, that the odor of the dried plant is just as strong as that of the fresh plant, throwing off an excessive bitterness. In fact, this bitterness is frequently so great that in simply moving about the dried plants one can taste this bitterness upon one's lips.

On the Air with Drug Control

Suggested Star

A one act sketch starring W. R. M. Wharton and offered to the Food and Drug Administration for their campaign on "Read the Label".

Note:—The Editors apologize for lifting most of Mr. Wharton's lines from his previous radio talks.

A RADIO playlet offered without charge to the Food and Drug Administration, U. S. Department of Agriculture, after a nightmare occasioned by listening to W. R. M. Wharton, chief, eastern division of the aforesaid administration of the aforesaid department, and W. W. Vincent, chief of the western division of the ditto, ditto, and other complications. Chiefs of the central and southern divisions, if any, have not as yet been heard from—not that it makes any difference.

Cast of characters includes (in order of importance) Mr. Wharton, Mr. Vincent, Announcer and Gullible Public. The last named character hardly amounts to anything—he only pays for it.

Scene—The broadcasting studio.

Announcer—Well, folks, we have with us again those peerless radio entertainers, Wharton and Vincent. As you all know, Mr. Wharton represents the East and Mr. Vincent the West in this series of talks. Thousands of you in the West followed Mr. Vincent's weekly talks on "How to Read the Label." Thousand of you in the East have recently become accustomed to Mr. Wharton, since he decided that you, too, should know "How to Read the Label." Nice work, Mr. Wharton, don't you let the West get ahead of the East, especially in an important thing like reading. But to get back to our program, for I know you can hardly wait to hear these two boys, we have at last at considerable expense brought these two feature stars together before the same microphone and you might just as well listen to them now as long as there is nothing else being broadcast at this hour and we have to fill it somehow. Here they are folks.

Mr. Wharton—*The American public has been more humbugged with worthless patent medicines than in perhaps any other way.*

Mr. Vincent—*Yes, folks, the only thing that keeps patent medicine manufacturers, pharmaceutical manufacturers, toilet goods manufacturers, tooth paste manufacturers and a host of others in business is the Gullible Public.*

(As Mr. Vincent is saying the last two words, None other than Gullible Public, himself, appears and takes his place before the microphone. The others apparently can neither see nor hear him.)

Gullible Public—What keeps you in business ?

Mr. Wharton—*Fake medicines are a drain on the pocketbooks of a large part of our population. They keep some families in poverty.*

Gullible Public—Sounds like my old pal, Demon Rum, when he was in his prime. And I wonder just how these Government bureaus, wrapping the business

man up in red tape and regulations figure they help the poverty situation.

Mr. Wharton—*I do not wish to be understood as intending a sweeping, all inclusive indictment of the patent medicine business or as opposing all self-medication. There are many products which are useful as home treatments for simple ailments and as first aids. There are drugs which are palliatives and some that are useful in the relief of pain, but practically all have decided limitations.*

Gullible Public—*Whew, that's certainly tossing off centuries of medical progress in a light manner. He must think I buy my medicines from one of those old time road shows and medicine men.*

Mr. Wharton—*People do not stop to reflect that headaches are due to many causes and that, although a medicine will relieve a headache due to one cause, it may have no effect on headaches due to various other causes.*

Gullible Public—Now that's what I call deep. If I'm sick from overeating, I'm not sick from undereating. I wonder what this guy thinks I am. He might learn something if he'd start to read some of the advertising done by drug manufacturers.

Dr. Wharton—*Appeals are made to you to buy medicines because of their vitamin content. Some of these are worthless, many of the claims are exaggerated, and you are frequently given an erroneous idea of your need for vitamins.*

Gullible Public—Gosh, worthless and exaggerated. Aren't any of them any good. I always thought that Squibb, Health Products, Parke-Davis, Mead Johnson, Patch, Abbott Labs., Upjohn, Winthrop, McCoy, and McKesson & Robbins, were pretty honest people.

Dr. Wharton—*Here are some of the expressions on which you should look with suspicion when you find them on labels or in advertisements of patent medicines: "The result of years of research," "Fifteen thousand doctors say", "Highly recommended by physicians", "Get well and stay well", "Remove the cause", and "Used by a physician for many years in his practice."*

Gullible Public—I may be Gullible, but I don't see why statements like that could not easily be substantiated. That's a pretty general indictment of a good many honest advertisers who are pushing their sales hard to overcome the current buying resistance. This fellow must be trying to stifle an industry by jeopardizing its sales throughout the country through this attack upon consumer confidence built up through long, hard years of honest effort.

Mr. Wharton—*Close your minds to the influences of extravagant curative claims. Do not let the experiences of your neighbors with various medicines unduly influence you. Ask yourself what the object is, in making such claims, if it is not to cause you to buy the product, and thus enrich the maker of it.*

Gullible Public—No, Mr. Wharton, a manufacturer does not want people to buy his product. He is only in business so that Government departments and officials may have something to regulate.

Mr. Vincent (The author almost forgot that he was in this play)—*Folks, We bear no ill will against any drug manufacturer. All we ask is that he label his product thus and so, advertise his product thus and so, sell his product thus and so, and in general conduct himself so that he may do nothing without doing it thus and so.*

Gullible Public—This stuff is the bunk. Me for the weather reports.

Cod Liver Extract for Anemia

A NEW product for treatment of pernicious anemia has been developed in the White Laboratories, Inc., division of Health Products Company, Newark, N. J. and has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association under the classification of "Marine Liver Extract-White." It is stated by Health Products officials that the product will reduce the cost of treatment of pernicious anemia to an average of 57 cents per day as evidenced by the fact that a 12 ounce bottle will retail for $2.25. This is comparison with the lowest priced liver extract costing 70 cents per day for a product not included in New and Non-Official Remedies. Accepted products give a still higher cost.

The new product is produced at Gloucester, Mass., as a by-product in the manufacture of White's Cod Liver Oil Concentrate. The residue remaining after extraction of oil from the livers of fish of the Gadus family is extracted with water, the aqueous extract is adjusted to the isolectric point (pH 5 to 6), heated to 80° C. and filtered. The filtrate is reduced under diminished pressure to a small volume and sufficient 95 per cent alcohol is added to produce an alcoholic concentration of 60 to 70 per cent. The precipitate is removed by filtration and discarded, and the filtrate reduced under diminished pressure at a temperature below 60° C. until the residue has a specific gravity of 1.22 at 43° C. The residue is dissolved in glycerin, and water added so that 100 cc. shall represent 3.027 grams of the fresh liver and contain 40 per cent of glycerin by weight.

Marine Liver Extract-White is a dark, amber liquid, slightly viscous and having a characteristic odor of liver.

The average daily therapeutic dose is 90 cc. (3 fluid ounces).

Drug Advertising Climbs

Advertisers of drug and toiletries spent $3,688,073 in national magazines, national farm magazines and radio broadcasting during February, 1931, compared to a total expenditure in February, 1930 of $3,497,636. These figures show that the expenditure of this industry in February of the current year made a gain of approximately $190,000 or 5.45 per cent over the February, 1930 total, according to the business survey department of Dorrance, Sullivan & Co., New York advertising agents.

Peruvian Drug Needs

Peru is still another foreign country which likes American drug products. Manufacturers can find a real market there awaiting development.

TOTAL imports of prepared medicines in Peru approximates $600,000 per annum, of which we supply about 60 per cent. Our exports to that country have been continually increasing since 1917, and we occupy a strong position in this trade. France supplies about 20 per cent. of the market requirements, Germany about 7 per cent. and the United Kingdom approximately 5 per cent.

France is our principal comeptitor, but in medicinal preparations the only lines in which she excels are ampoules, serums and hypodermic products, which constitute only a small portion of the total drug trade.

Our products are continually increasing in favor and new lines placed on the market—especially if well advertised—have little difficulty in finding ready sale.

Wholesale drug concerns are well stocked with American products, and in most retail stores our goods are given prominent positions. They are displayed everywhere and continued expansion of the trade can be anticipated.

As will be seen by the statistics which follow, our exports of medicinals for internal use are large, over $260,000 annually. We ship about $80,000 worth of products for external use, and approximately $45,000 worth of biologics. Other exports of importance in the trade are dental creams, $70,000, talcum, $21,500; powders, compacts, cold- and vanishing- creams; toilet and fancy soaps.

In the toilet preparations lines we do not have as large a percentage as in medicinals and pharmaceuticals, but our interest in Peruvian trade is still strong, about 40 per cent. of the total imported, Germany being our nearest competitor with about 35 per cent., followed by France with about 15 per cent.

The latest statistics of our government—those of 1929—give the following figures regarding our exports to Peru:

Ewing Galloway

Business scene in Peru's capital

Coal-tar medicinals	$ 7,115
Quinine and salts	4,018
Milk of Magnesia	14,259
Castor oil	4,262
Cod-liver oil	2,443
White mineral oil	3,122
Biologics, for animal and veterinary use	6,319
" for human use	33,093
Glandular products	6,474
Veterinary preparations	628
Dentists' preparations	1,133
Plasters	9,157
Linaments	8,577
Salves and ointments	38,909
Tinctures	358
Other external medicinals	34,590
Tonics	99,279
Fluid extract cascara	64
Other fluid extracts	4,350
Powdered extracts	400
Cough and bronchial preparations	4,348
Other internal medicinals	159,908
Other non-coal tar medicinals and pharmaceuticals	12,254
Disinfectants, deodorants, germicides, antiseptics, and similar preparations	16,359
Petrolatum	6,773
Toilet soaps	22,232
Shaving soaps (creams, powders, sticks)	3,259
Perfumery and toilet water	28,314
Dental creams	67,032
Other dentifrices	2,577
Talcum	21,537
Face powder	811
Compacts	376
Bath and toilet powders	143
Cold creams	7,543
Vanishing and other creams	4,609
Rouges, lipsticks and other cosmetics	927
Other toilet preparations	13,878

A recent rise in tariff rates has increased interest in local manufacture, especially in toiletries, but local manufacture is still in its infancy, and foreign goods continue to enjoy preference. No statistics regarding local manufacture are available, and although many kinds of toiletries are now made locally, competition is not important.

Consumption of this class of goods is confined almost entirely to coastal cities—the Indians in the interior being an unimportant factor. In spite of limitations of the buying public the per capita consumption of these goods in Peru is probably as high as in any other of the South American countries.

Preparations in demand are perfumes, lotions, hair tonics, powders, cosmetics, and to a small degree, depilitories and manicure specialties.

Our goods have gained an enviable reputation among Peruvian people. There is, without doubt, an opportunity to increase sales of most articles in the toiletry line—with the possible exception of perfumes—if goods are properly advertised and exploited.

This also applies to medicinal and pharmaceutical products, especially patent medicines.

Sale of medicinal products in Peru is regulated by a governmental organization, the Pharmacy Commission, and the main items of its regulations are as follows:

Before goods are offered for sale they must be analysed by the drug inspection committee and authorized by the Board of Health, which issues sales licenses. Preparations containing drugs which are considered dangerous by the Board, are granted only restricted licenses. A small fee is charged for the analyses.

In order to obtain a license, the manufacturer, or exporter, must grant power of attorney to his local representative, in order that he may prove that he is acting for his principal. The representative cannot himself present the application, but must do so through a pharmacist—either a native Peruvian or a foreigner who is registered in the country, and to whom the power of attorney will be transferred. The pharmacist then submits, in addition to the application, a duly legalized document certifying to the exactness of the formula.

As soon as the Board of Health has approved a medical preparation, the container thereafter must bear a label showing the chemical composition in accordance with the decimal metric system and the date on which the license is granted.

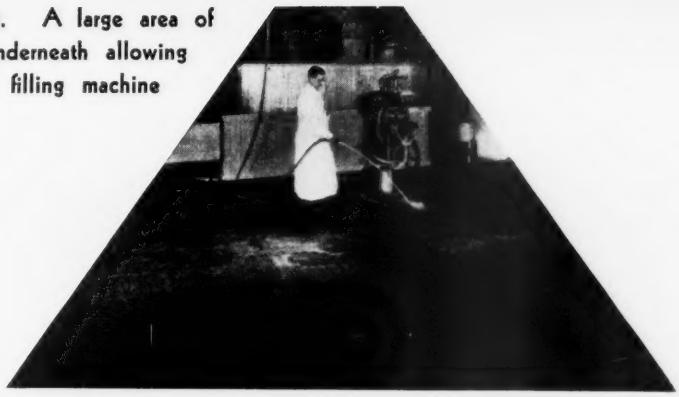
The method of handling trade in Peru is very similar to that of Venezuela and Colombia. The personal representative is recommended, but owing to restricted sales, there is not the same desirability, or necessity, for a branch office as in the case of Colombia.

The establishment of manufacturing, assembling, or packing plants, or depots for distribution, has not proved successful in Peru, as these establishments developed competition from distributors who offered goods from stocks on the local market. It is possible, however, that if such manufacturing, or packing plants were in charge of an American it might be possible for him to push sales, and place the goods at lower rates to meet competition.

Most of the business in Peru is handled by local representatives of manufacturers who are usually granted exclusive rights, and distribute through the wholesale drug concerns, or through their sub-agents in other cities. The business is carried on principally in Lima, and most of the wholesale drug concerns are located there.

In Peru, as in other South American countries, many of the pharmacies are owned by physicians, and these men make their purchases from wholesale drug concerns, or representatives of foreign firms, seldom, or never importing direct.

(*Continued on page 278*)



A unique arrangement. A large area of grating with a pit underneath allowing proper cleaning of a filling machine

Modern Drug Manufacturing

Manufacturing and packaging a wide variety of products, Parke, Davis & Company furnishes an excellent example of the use of modern equipment in drug manufacturing.

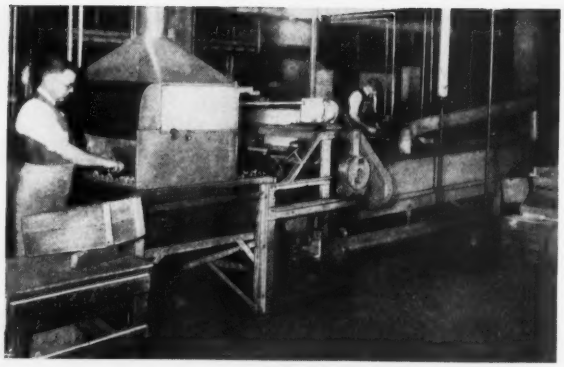
THE name Parke-Davis carries with it such a world-wide reputation for integrity and progressive methods of doing bussinss that it needs no introduction. Throughout the years of its existence, Parke-Davis has been constructive in every sense of the word. In building up its own business to its present position, Parke-Davis has also built up the industry of which it is a part. It has done much to create public confidence in modern methods of manufacture—particularly in products packed in glass. Even advertisements of this firm during the past few years particularly have been along peculiarly unselfish lines. They have brought to the reader a new appreciation of what is being done for the advancement and safety of mankind by both the medical profession and the closely related pharmaceutical manufacturing and distributing agencies.

It is not surprising, in view of such a background and such an attitude, that Parke-Davis should go to painstaking extremes to insure the most efficient, sanitary, reliable, and modern methods in every department and every operation of its manufacturing and finishing plants. The visitor cannot but be impressed with the strict cleanliness that is encountered everywhere and with the remarkable smoothness which marks the performance of every operation.

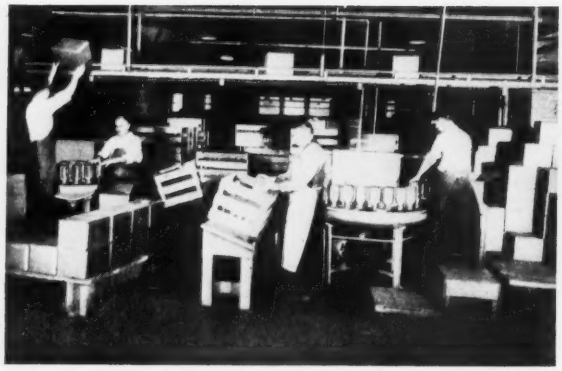
For our present purpose we shall confine ourselves to a quick inspection of those operations which take place in the new finishing plant where liquids, creams, ointments, and such products are handled.

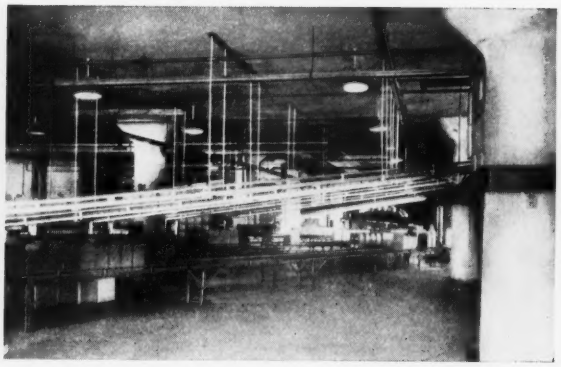
The Engineering Department of the Parke-Davis Company was faced with a complex problem here—a problem which appears still more complex when one considers the wide variety of sizes and types of containers as well as the diversity of the products to be handled. The problem was, of course, to lay out and equip a plant where all these tasks could be accomplished with a minimum of labor and on a minimum number of machines, conveyors, etc. The result is one of which the Parke-Davis engineers may well be proud.

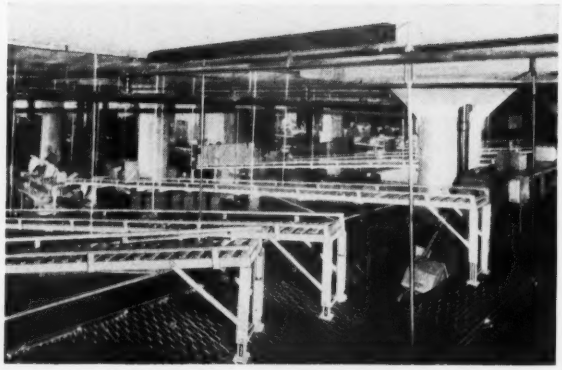
With the aid of the accompanying photographs let us trace finishing operations from the time the empty containers are received until the finished package is put into stock. This means, of course, the handling of



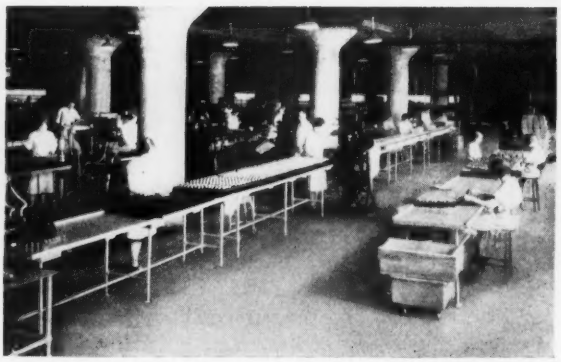
At the left above and below are large and small bottles being washed. Directly below are shown the overhead conveyors which carry the empty re-shipping corrugated cartons—from which the bottles to be washed have been removed—to the accumulating and distributing platform on the mezzanine



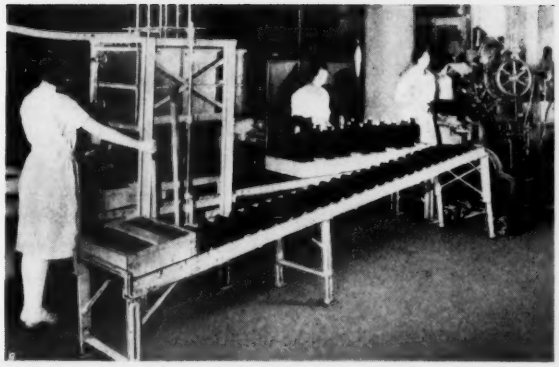


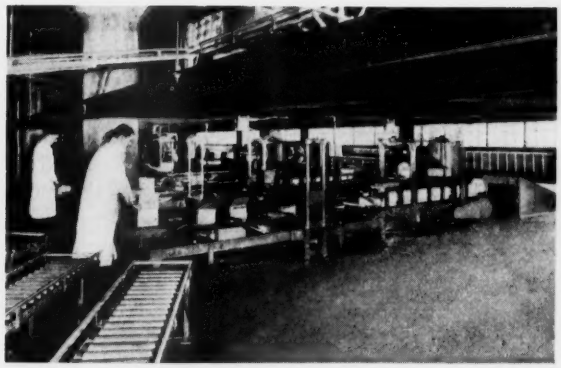


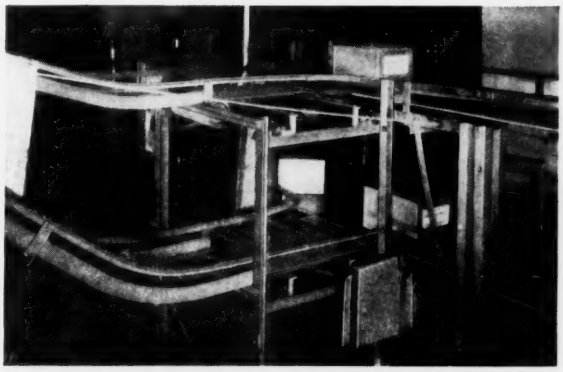
Below at the left are shown the tooth paste and ointment machines which are most modern and efficient. And below at the right is illustrated the small order and short run department in which semi-automatic and hand methods of finishing must be employed



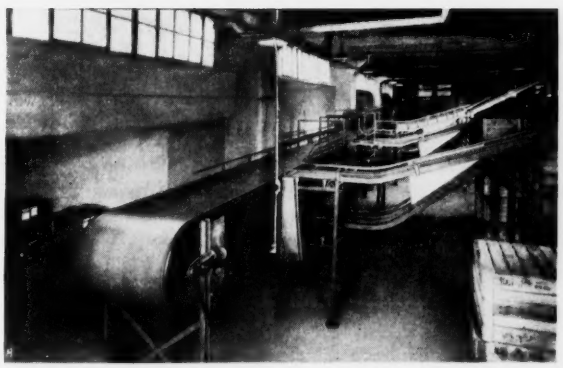
At the right is shown the large bulk order packer which fills bottles from one-half American gallon to an imperial gallon. Below at left is the completely automatic high-speed line-up for filling cod liver oil or mineral oil; it is specially designed for quick change-over from one to the other without shut-down for cleaning. Below at right is shown shipping cartons being automatically sealed

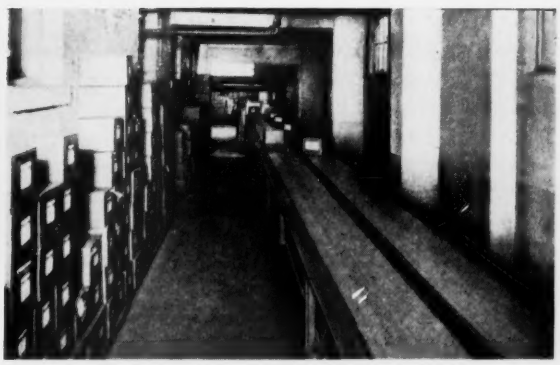






Illustrations at left above and below show how the lines of travel are selected to send the finished goods to different warehouses. Lower right shows the finished cartons arriving in the warehouse





the products for both the bulk trade to large users of pharmaceuticals and for the smaller items in which Parke-Davis specializes.

With products so carefully guarded in manufacture it is natural that equal care should be exercised in finishing the package for marketing.

Bottles as they are received are handled on slides which move them in their shipping cases some four hundred and fifty feet to the empty bottle storage space in the basement of the building. Here they are sorted and stacked.

The first step in handling the bottles for the packing of a product is washing. *Every bottle that goes into the Parke-Davis plant is thoroughly washed before it is filled.*

The large bottles are washed on rotary type washers. Some of these large bottles are to contain oils, etc., and are permitted to dry completely before they go to the finishing department.

Overhead conveyors which will be seen, carry the empty corrugated reshipping cases to the carton accumulating and distributing platform on the mezzanine. To distribute the cartons is no simple problem. At times thereare twenty-five to fifty different products being filled on the floor at once, in varying quantities from the small hand filling operations to high powered, fully automatic line production. On the mezzanine the cases are accumulated and sorted by an operator whose duty it is to keep them segregated, ready for feeding down the conveyors. These conveyors carry the cartons to the ends of the proper finishing lines, of which there are eight or ten.

Machines for filling tooth paste, ointments, and other products which go into collapsible tubes, are the most up-to-date and efficient automatic machines available for this type of production.

The high speed, automatic production line shown is one of the most interesting features of this entire plant. The equipment is used exclusively for handling cod liver oil and mineral oil and is especially designed for quick changeover from one to the other without a shut-down being necessary for cleaning. The filler is really two machines in one, having separate supply tanks and vacuum units. Another unique feature of this machine is a device which injects carbonic gas into the air space above the cod liver oil, thus insuring absolute sterility.

From the filler, the bottles pass to an automatic rotary capping machine equipped with a cap hopper to eliminate human handling.

Finally, the bottles are fed automatically to the straightaway labeling machine. This machine performs one of the most difficult of such tasks—the labeling of oval bottles automatically.

A typical sidelight on Parke-Davis methods, is a wide area of steel grating over a drain pit on the finishing floor where machines are thoroughly cleaned and washed before changing over from one product to another or when they become dirty. The machine shown is a labeler.

Roller conveyors carry filled cartons to the sealing machines. At the point where the sealed cartons go down the slide to the floor below, there is a lever, by means of which the operator can switch the output to either one of two lines of travel. One leads to what is known as Warehouse 60, and the other to Warehouse 63.

The detail of how this is accomplished is interesting. The packed and sealed cartons coming down the incline slide are discharged onto either the upper or lower surface of the large conveyor belt. Those cartons which are deposited on the lower or return surface are discharged at the point nearest the front of the view onto a double conveying line into Warehous 60. Those on the top are similarly diverted into Warehouse 63 at the far end. By this unique arrangement it is possible to handle the output of four sealing machines on one belt at the same time.

Finally, the completed sealed cartons travel along a double conveyor in Warehouse 60, where they are taken off at the proper point and put into stock.

From the time that the containers come into the building, via the slide mentioned above, until they are put into storage, they travel over more than fifteen hundred feet of conveyors of one type or another.

This brief description gives a picture of what can be done and how easily the most perplexing and complicated problems of finishing can be solved by standard, modern equipment—provided that careful study is made before a single order is placed.

Alcohol Diversion

Mr. Justice Sutherland delivered the opinion of the court in the case of the Waterloo Distilling Corporation Et Al. v. United States Supreme Court. This was a proceeding, under R. S. sections 3257 and 3281, by the United States to forfeit a distillery, warehouse and denaturing plant at the Waterloo Distilling Corp. on the ground that the corporation had conducted its distilling business upon the premises with intent to defraud, and had defrauded, the Government of the tax on the spirits distilled, in consequence of which the premises had become forfeited to the Government.

The fraud alleged was the withdrawal of alcohol ostensibly for nonbeverage but in reality for beverage purposes, without payment of the tax on spirits diverted to beverage purposes imposed by section 600 (a) of the Revenue Act of 1918, as amended. The corporation denied any violation of law.

The alleged diversion was accomplished by the withdrawal of pure alcohol, which was then specially denatured and made unfit to drink, and in that condition was sold. Petitioners contend that this was a diversion not of distilled spirits, but of denatured alcohol, and, therefore, not within the reach of section 600 (a). But upon the evidence and the instructions of the court it was open to the jury to find that the alcohol was specially denatured to the contemplated end that, after it had passed into the hands of purchasers, it would be "cleaned" and finally used for beverage purposes. In that view it is entirely accurate to say that the alcohol was diverted to beverage purposes, the special denaturing being only an intervening step.

The Literature Says:-

Adulterated Aloes

Determination of chlorinated aloin can be preceded by a very simple test, based on the fact that well-prepared aloes are almost entirely soluble in ammonia. Hence this test may be used in certain instances for testing the purity of the drug, while under other conditions it is necessary to carry out the more complicated test.

The simpler method is as follows. Two grams of pulverized aloes are used as the sample and are placed in an Erlenmeyer flask along with 25 cc. ammonia solution made by dissolving 10 cc. of ammonia in water to make 100 cc. This is allowed to remain stoppered for one hour during being agitated three or four times. It is then filtered through a tared filter paper 7 cm. in diameter. Precipitate is washed with ammoniacal water until wash liquor is colorless. During filtration, which is often quite slow, and also during washing, funnel, should be covered, to avoid loss of ammonia, which entrains the aloes precipitate in a gelatinous magma. After dessication in air at 25° to 30° C., precipitate is weighed. Weight will show amount of impurities or adulterants in the aloes. Results obtained by this method, are given in the original article in tabulated form. It is found that according to this test Curacao aloes is better than any other grade. E. Leger Journal de Pharmacie et de Chimie, 1931, volume 123, pages 143-144.

Determining Alkaloids

A new method of determining alkaloids consists in treating the alkaloid, dissolved in a hydrochloric acid solution, with excess of tetrachloro-iodic acid. Alkaloids are thereby converted into the tetrachloro-iodide derivatives, which possess characteristics readily distinguishable, and thus clearly differentiate between the alkaloids. The iodine can be quantitatively separated from these tetrachloroiodides, when they are treated with potassium iodide solution acidified with acetic acid. The iodine thus separated can be determined in usual fashion. The amount of tetrachloro-iodic acid used can be determined by saturation of a concentrated hydrochloric acid solution, containing very finely pulverized iodine in suspension, by means of chlorine. Journal of the Chemical Society of London.

Pine Needle Bath Preparations

Pine needle bath preparations in the milky form are made according to two different methods. In one of these methods the milky character of the preparation is obtained by making an emulsion with the aid of soap, gum tragacanth and the like. In the second method the milky preparation is obtained by means of tincture of benzoin. There are still other directions which call for the use of lanolin for this purpose. The simplest formula is the one that follows.

Two parts of oil of eucalyptus, two parts of lemon oil, 18 parts of oil of silver fir, 15 parts of templin oil, 400 parts of tincture of benzoin, 8,000 parts of alcohol and 3,000 parts of water are mixed. Another formula calls for six parts of soda soap dissolved in 100 parts of alcohol. Ten parts of this solution are triturated to form a smooth mixture with half a part of extremely fine gum tragacanth powder. Then four parts by weight of pine needle oil, one part by weight of juniper oil and 12.5 parts by weight of alcohol are added. When the mass has been mixed together thoroughly enough to form a uniform mixture, 15 parts of water are added and the mixture is converted into the emulsified form by agitation and shaking. At the very end of the process 50 to 60 parts of water are added.

Pine needle balsam may be prepared in the following manner. Three parts by weight of lavender oil are mixed with 20 parts of templin oil, 25 parts of pine needle oil and 1,000 parts of cognac. Enough Chlorophyll is added to give desired color. Drogisten Zeitung.

Differentiating Between Kaolin and Talc

Because of the similarity of Kaolin and talc as to chemical and physical characteristics, differentiation is often difficult. Author has evolved a method which depends on use of haematoxylin in a color reaction. This substance, obtained from logwood, gives violet color when aluminum salts are present, and this color reaction is extremely delicate, it being possible to detect thereby 0.65 milligram of aluminum hydroxide per liter of water.

In detecting the difference between kaolin and talc, the reaction is carried out in a test tube with a 1% alcoholic solution of haematoxylin. About one gram of the silicate is heated to boiling with 10 cc. of dilute hydrochloric acid (2 -normal solution). The solution is filtered and filtrate neutralized with ammonia (2-norma solution). The ammoniacal solution is slightly acidified with dilute acetic acid and 1 cc. of the alcoholic haematoxylin solution is added. When kaolin is present, the solution is momentarily colored a pinkish violet. The color gradually deepens and changes to bluish violet. When talc is present the color of the solution remains yellowish. Der Parfuemeur, volume 4, pages 099-910.

Chamomile Extract

Chamomile extract may be prepared in the following manner. One thousand grams of coarsely pulverized chamomile are placed in a closed vessel in to which is poured a mixture of two kilograms of 90% alcohol and three kilograms of distilled water. This mixture is allowed to remain in contact with the chamomile for five to six days at 15° to 20° C., being agitated from time to time. The magma is then pressed out. The pressed residue is treated in similar manner with one kilogram of 90% alcohol and 1½ kilograms of water. The mass is allowed to remain for three days this time before being pressed out.

The liquors obtained by these pressing operations are united and allowed to stand for two days in a cool room. Then the liquor is filtered and 2½ kilograms of alcohol are distilled off. The remaining liquid is evaporated to a thick extract. Twenty-five grams of alcohol distillate are added about two to three times during the evaporation. This is done for the purpose of dissolving the resinous deposits formed. When larger quantities of chamomile are used in this extraction process, the alcohol is also distilled off from the press residues. The yeild amounts to 280 to 300 grams.

There is a more modern process for preparing chamomile extract, which is much like the process of making pine needle extract. In the first stage of the process, the oil is distilled over by means of steam. Then the chamomile is exhausted with water and the mass is evaporated to a thick extract. Then the oil, which has been distilled from the chamomile, is added to the extract. This method is stated to possess the advantage, that the oil, which is an essential component of the chamomile, is again found in the

extract, while this oil is not present in chamomile extract prepared according to the first process.

Liquid chamomile extracts cannot be prepared according to the percolation method. The reason for this is that chamomile is very slimy and the slimy mass formed prevents penetration of the liquid. Deutscher Parfuemeur Zeitung through Der Parfuemeur, volume 5, 18.

Manufacture of Vanillin

The manufacture of vanillin is discussed from various angles. The process of obtaining vanillin from proto-catechuic aldehyde is described in detail. The latter product is first obtained from pyrocatechin. Details are also given of the method for separating ortho-vanillin and iso-vanillin. The resinous substances and coloring matters are removed by distillation under a vacuum. Vanillin is also obtained from oil of cloves. The process is outlined. Dr. J. Schwyzer, Chemiker Zeitung, volume 54, pages 817-8; 839-840.

Kallikrein

This substance is a hormone of the pancreatic glands. An investigation was carried out to determine the chemical properties and characteristics of kallikrein and also its many-sided therapeutic applications. It was found that removal of inactive substances mixed with kallikrein affords great difficulties. Kallikrein soon decomposes on standing and operations carried out to free it from impurities may also cause decomposition of the active principle itself. Details are given of the process used. Kallikrein is insoluble in most organic solvents and is however dissolved by formamide and formic acid.

It has been established that use of this substance is indicated in treatment of high blood pressure, disturbances of the metabolism, general improvement of heart action, which occurs simultaneously with the lowering of blood pressure, as well as improvement in the circulation. H. Kraut, Chemiker Zeitung, volume 54, pages 849-851.

Distinguishing Sulphonal and Trional

Sulphonal may be distinguished from trional by color reactions. These are carried out with the aid of resorcinol and sulphuric acid, followed by dilution and addition of ammonia. Sulphonal gives a rose color under these conditions, while trional gives a brownish-yellow or yellow-brown color. L. Ekkert, Pharm. Zentral., volume 71, page 550.

Capsanthin

The ground pericarp, two kilograms, is precolated with light petroleum, two liters, the extract diluted with one liter of ether, and left over night in contact with 200 cc. of 30% methyl alcohol potash. Crystals which separate are dissolved in two liters of ether, and the solution repeatedly washed with water and dried with sodium sulphate. After evaporation to 500 cc., 1½ liters of light petroleum are added, the yield of coloring matter precipitated being 3.9 grams. The product is recrystallized from methanol. It is of pharmaceutical importance. L. Cholnoky, Magyar Chem. Fol., volume 36, 11 to 17; 17 to 25.

Extraction of Orange Oil

Experiments carried out to isolate orange oil by distillation with steam, proved that oil obtained was of poor quality and was partially decomposed and the yield accordingly poor. A better grade of oil was obtained by distilling in vacuum, but even under these conditions the yield was only 80%. When petroleum ether is used in extraction, the solvent cannot be satisfactorily separated from the dissolved mass, and it is better to use alcohol. When the alcoholic solution is poured into water, the oil separates out and can be readily removed. The very fine emulsion formed in this manner, which cannot be destroyed by centrifuging, can be broken up with coalescence of the particle by addition of different cathions. Centrifuging is then effective. F. J. de Villiers, Journal of the South African Chemical Institute, volume 13, pages 48 to 52.

Analysis of Oil from Eucalyptus Globulus

The oil obtained from eucalyptus globulus has a Spanish origin. Density was 0.9193 at 13° C. and 0.9148 at 19.3° C. Index of refraction was 1.4664 at 19.3° C. Content of cineol was 56%. The oil can be mixed in any proportion with 95% alcohol. Water is present in traces. Freezing point lies below minus 20° C. and boiling point ranges from 168° to 190° C. Viscosity varies from 1.18° to 1.06° Engler between 20.8° and 52.6° C. Anales Soc. Espanola Fisica Quim., volume 28, pages 1036 to 1044.

Dry Distillation of Tolu Balsam

It has been found that certain compounds are formed during dry distillation of tolu balsam, whose formation has not been known up to the present time. Thus 250 grams of tolu balsam were distilled with evolution of carbon dioxide and hydrogen. The residue was a spongy, friable coke. The distillate obtained was a tarry mass which contained considerable quantities of benzoic acid and cinnamic acid. The acid were neutralized by treatment with soda. A strongly odoriferous oil was obtained by steam distillation and treated with 5% sodium hydroxide, whereat a portion remained undissolved. The oil was fractionated a number of times and three fractions separted and examined. In one fraction guaiacol was found; in another cresol and in the third a substance which was probably ethyl-guaiacol. J. Dupont and J. J. Guerlain, Comptes rendues, volume 191, pages 716-7

Chlorine Number of Drugs

A new constant has been added to the charcteristics on which evaluation of drugs can be based. This is the chlorine number. It is determined in the following manner. Twenty-five one hundreths gram of finely powdered drug is completely exhausted with sufficient boiling water to produce 250 cc. of extract. Samples of 5, 10, and 15 cc. each are taken from this solution and transferred to glass-stoppered bottles and made up with water to 25 cc. total volume. To each 25 cc. are added tenth normal chlorinated lime solution and 2 cc. of a 20% solution of sulphuric acid. They are then set aside for five minutes protected against direct sunlight. After addition of potassium iodide and another five minutes standing, solutions are titrated with tenth normal solution of sodium thiosulphate. The exact value of the chlorinated lime solution must be determined in a blank test.

By the chlorine number is meant the number of cc. of tenth normal solution of sodium thiosulphate corresponding to 0.025 gram of the drug. The chlorinated lime solution must be freshly prepared, or a concentrated filtered solution can be kept containing about twenty milligrams of active chlorine per liter. The chlorine numbers of a series of drugs have been determined and the following are some of the values found:—sugar 0.15; saffron 13.1; uva ursi fol. 28.8; tannin 112.1; ergot 2.75; ipecacuahnae rad. 3.61; gentian rad. 3.98; senegae rad. 4.62; sennae fol. 6.75; glycyrrhizae rad. 5.72; sem. strophanth. Kombe 4.23; belladonna fol. 6.75; cinchon, cort. 11.02; rheirhiz. 16.64. The age, state of maturation and preparation of drug influence chlorine number. Stamm, Farm. Notisblad, volume 39, pages 21 and 125.

U. S. Stoneware Co., New York, announce a new electric tumblemixer, as a new unit of efficiency and sanitation in the mixing of dry or liquid solutions, such as extracts, syrups, food products, essential oils, perfumes, drugs, condiments, medicines, pharmaceuticals, etc. Perfect purity is assured because there is no metallic contamination of internal shafts, gears or paddles. The chemical stoneware barrel and cover are permanently acid, alkali and corrosion proof.

Quinine in India

Perhaps the largest consuming market for Quinine is India where the drug was introduced seventy-five years ago.

QUININE, introduced into India about 75 years ago, probably finds in India, the largest consuming market in the world. The drug is obtainable throughout the country, and is available even to the poorest, being dispensed free of charge by Municipal dispensaries in the larger places, while those requiring it in the smaller villages obtain supplies from wherever there is such a dispensary. Qualified doctors are in charge of these dispensaries, and they usually buy their supplies of quinine in powder form packed in 1-lb. tins, this being the cheapest packing obtainable in the market. Chemists, too, buy 75 per cent. of their supplies of quinine in powder form, as price is the principal factor with the vast majority of Indians. These chemists sell it by the ounce or half-ounce. The most important quinine salts sold in India are quinine sulfate and quinine hydrochloride; the former being considerably cheaper and enjoying the larger sale. The doctors in India usually prescribe the hydrochloride to European residents and well-to-do Indians, prices to chemists ranging from Rupees 17 Annas 12 to Rupees 19 per lb. and Rs. 20, Annas 12 to Rs. 22 respectively.

Several British and German well-known makes of quinine, such as Howards, May & Baker, Boots Pure Drug Chemists, Zimmer, Hoffmann La Roche, and Bohringer are well established in the Indian market. They have their sole agents for India, being represented by well-known import firms in Calcutta, Bombay, and other leading centres of trade. Shipments of quinine are sent on consignment by manufacturers to their Indian agents who sell them from stock to big chemists. The big chemists act as sub-agents or stockists, buying mostly on a credit basis of one to two months. Profits range from two and one-half per cent. to one-half per cent.

To introduce a new brand of quinine on the Indian market, it is necessary to engage Indian canvassers, if possible, from among medical men. They go and visit doctors from one town to another and give them descriptive literature with particulars of the scientific composition of the quinine as well as samples if desired. Canvassers receive a salary of Rupees 120 and upwards and can also earn a commission on any small business they may get from doctors they call upon. No difficulty whatever is experienced in obtaining qualified medical men for this work, as the profession in India is somewhat overcrowded. Many of these canvassers have their own practices and spend half the day in canvassing for quinine business. This method of propaganda is done only in the larger places; in small localities doctors are worked by direct mailings from manufacturers, it being for the agent to supply the addresses. Manufacturers lay great stress on keeping in personal touch with doctors, so as to be independent of the agent in case a change be made. This literature used for circularizing doctors in India is generally printed in English, as the majority understand this language; but pamphlets used for distributing by chemists to their customers are usually printed in the vernacular. To introduce quinine among chemists, where sole agents have their own offices, manufacturers work the chemist through their own sales staff. In the larger towns, such as Calcutta and Bombay, European assistants of the firm themselves call on the more important chemists, as such courtesy is greatly appreciated and results in more and quicker business being done. In the case of chemists in less important cities, it is for the medical canvasser to call on them. Many of these sole agents are engaged in the cotton business with an inland organization all over the country with agencies in all the more important cotton growing areas. There the chemists are worked mostly by the agents, who actually are employees of the firm. They receive a fixed salary and, part of their duties, have to take up quinine as a sideline without any extra remuneration.

Those firms without any such cotton organization employ more canvassers to cover the field.

Not much advertising is employed in the sale of quinine in India, as it is everywhere a standard medicine the purpose of which is well known. There is some advertising done in the medical papers as well as in the lay press, but the amount is insignificant in comparison with sales. All quinine manufacturers of any importance belong to a Syndicate, which controls prices also in India. Heavy fines are stipulated in case of undercutting in price on the part of any sole agent in India, and he must not sell at a price below the minimum fixed by the Syndicate. However, it is impossible to prevent the native dealer from selling at whatever price he chooses, and the cut margins of profit at which the Indian will sell to the public is often extraordinary. Perhaps the dealer cannot help himself, as the average Indian is a keen buyer: he will go from store to store and ask for prices before deciding where to buy; if he can get an ounce of quinine for Rupee 1-8-0 against Rupee 1-8-3, he will buy the former, regardless of the time consumed in locating the cheapest store and in bargaining.

In the sale of quinine in India cheapness is the most important factor. With the doctor and the chemist the name of a brand does count to a certain extent, and one or two makes have been able to monopolize the market by consistency in quality over long periods. Manufacturers of these brands are able to sell their quinine two or three rupees higher than the others.

There is a Government quinine factory in Calcutta, but so far no great success has been attained, as apparently it has not yet been able to manufacture a high grade of quinine, besides not being competitive in price. On account of the present boycott of British goods in India, Howards, which, in normal times, are the largest suppliers of quinine, are selling very little and the German brands benefiting accordingly. Imports of quinine salts into British India were during recent years the following:

	Pounds	*Rupees*
1927-8	113,637	2,342,186
1928-9	133,276	2,447,075
1929-30	129,037	2,875,161

Each period covers 12 months: 1st April; 31st March (Customs' year in India).

1 Rupee $0.36.

16 Annas make 1 Rupee.

Norwich Pharmacal Co., has elected the following officers for the ensuring year: President, William G. Peckham; vice-presidents, Robert D. Eaton, Melvin C. Eaton, M. Webster Stofer, Turner F. Currens, Frank L. McCartney; treasurer and general manager, Robert S. Eaton; secretary, J. Fred Windolph; assistant secretary and assistant treasurer, T. M. Weems.

Bee Brand Spice products, marketed by McCormick & Co., Baltimore, are appearing in a new style package. The new package retains the familiar Bee trade mark, the same shaped can and makes use of the same colors, but a wide band of blue featuring the Bee Brand name runs diagonally across the center of the can.

Industry's Books

Business Insurance, by L. G. Simon, 326 pages, National Underwriter Co., Cincinnati.

Life insurance as it is being applied to the problems of business and business continuity. A discussion for salesman and prospect.

Fifty Hand-Picked Common Stocks, by J. George Frederick, 222 pages, Business Bourse, New York, $6.00 net.

A report on the fifty stocks which will, in the author's opinion, be the best "panic bargains" to buy for "the long pull." Stocks recommended in the drug and chemical group are Allied Chemical, Mathieson Alkali, du Pont, Standard Oil of New Jersey, Colgate-Palmolive Peet, Drug, Inc., Texas Corp., and Union Carbide Co.,

Internal Medicine, by Humphry Rolleston, 92 pages, Paul B. Hoeber, Inc., New York, $1.50 net

A brief survey of the history of internal medicine, one of a series of handbooks published under the general title, "Clio Medica," giving special phases of the history of modern medical science.

Man Management in Chain Stores, by H. R. Barnett, 247 pages, Harper & Brothers, New York, $3.50 net.

A presentation of those methods of chain operation which are closely connected to that most important chain problem—the management and development of personnel. A manual on training and morale-building methods.

Profitable Selling in America's Greatest Market, 106 pages, Marine Midland Group, Inc., New York.

A statisical study of the New York State market on the basis of the geographical units of the market and the concentration of sales opportunity.

Sandalwood Oil, by Ernest J. Parry, 46 pages, Published by the Government of Mysore, Printed by Waterlow & Sons, Ltd., London Wall, London.

An up-to-date exposition of all that is known concerning sandalwood oil and of other oils, which, though inferior to it in essential qualities, are offered for sale under the same or similar names. A complete and interesting compilation of all the available information on the scientific aspect of this material, together with tests it should satisfy to be accepted as genuine.

The Student's Dictionary of Synonyms and Antonyms, by Lloyd Adams, 194 pages, Noble & Noble, New York.

A reference book of synonyms and antonyms in readily accessible form for the writer, speaker or student.

What the Figures Mean, by Spencer B. Meredith, 77 pages, Financial Publishing Co., Boston, $1.50 net.

An easily understood handbook designed to enable you to read financial statements intelligently.

History and Survey of Accountancy, by Wilmer L. Green, 288 pages, Standard Text Press, Brooklyn, N. Y., $3.50, net.

A record of the historical development, ethics, legislation, education, societies, and state laws for the guidance of practicing accountants and students of accountancy.

The Economics of American Business, by Paul F. Gemmill, 489 pages, Harper & Bros., New York, $4.00 net.

A description of the principles and methods utilized today by American enterprisers, land-owners, wage-earners and capitalists, illustrated by actual examples from contemporary business practice.

The Trend in Advertising Control

Although the suggested Copeland Amendment to the Food and Drug Act is dead until the next session, opinions are being formed in the trade as to what type of regulation would be least objectionable. We should like to have opinions from those who have thought out the subject.

LEGISLATION dealing with alleged false advertising of drugs comes to the front upon the introduction by Senator Copeland of New York of a bill which would amend the Food and Drug Act to prohibit this practice. The bill classes such advertising as a form of misbranding. It provides that a drug shall be considered misbranded "if, in any manner, or by any means whatsoever, it, or the ingredients or substances contained therein, or the curative and therapeutic effect of such article or its ingredients or substances, are falsely or deceptively advertised, represented, or described***."

Drug trade representatives regard the bill as "dangerous," while awaiting official reaction from their associations and memberships. They say they don't want to advertise falsely, but they object to some government official being empowered to say what is false advertising.

Senator Copeland says he introduced the bill at the suggestion of the New York City Health Department. He says he has an open mind as to whether his bill or some other way would be the best method of dealing with the situation, but "there are abuses" that need to be corrected.

The Senate Committee on Agriculture and Forestry, to which the measure was referred, sent it to the Department of Agriculture for comment. The Department has reported back that—

"Because we believe an amendment like S. 5656 (the Copeland bill) will assist in curbing deceptive medical advertising and thus protect the American consumer from fraud and deception, the Department can not fail to regard an amendment of this kind with favor."

However, the Secretary suggests that the Department be given opportunity to have practical legal questions involved in the bill given consideration by the Solicitor of the Department, and to be reported on at a later date.

The Federal Trade Commission has been carrying on a campaign against alleged false advertising under its authority to act against unfair competition. Advertisers and publishers have been co-operating with the Commission to some extent. But the power of the Commission to regulate advertising has been challenged in the courts, in the Marmola case, which has been appealed to the Supreme Court. Everybody recognizes that it is possible that the court may not sustain the Commission.

Charles Wesley Dunn, attorney for the American Pharmaceutical Manufacturers Association, is reported to hold the view that the Commission has authority to forbid false advertising. At the same time he is reported to have raised the question whether drug manufacturers want their labels censored by one department of the government, namely the Food and Drug Administration, and their advertising censored by another department, the Federal Trade Commission. It is believed Mr. Dunn would prefer the Department of Agriculture to regulate advertising, inasmuch as it regulates labels.

On the other hand, other trade representatives would prefer to take chances with the Federal Trade Commission. The latter does not administer a criminal law like the Food and Drugs Act. There are no specific penalties for failure to obey Federal Trade Commission orders.

Mr. Dunn's reported idea could be carried out, it is believed, by the Department in one of several ways. One of these has been suggested by Walter G. Campbell, Director of Regulatory Work, in the Department, and in charge of the Food and Drug Administration.

"Some publishers and Better Business Bureaus are attempting to determine how far they should go in censoring advertising," said Mr. Campbell. "They have asked the Department what is contained in various drug products, so as to enable them to decide whether advertising matter is truthful. But we can not tell what the composition of any firm's product is, no matter how commendable the purpose may be. We can not give such information.

"As a rule you can intelligently and fairly censor advertising of a drug product if there appear in the advertising material statements that are at variance, or that exceed, statements on the label. In other words, the label could be used as a yardstick to measure the justifiable character of the advertising

Campbell Would Like Control

"I would like to see the Department authorized to undertake, in an advisory capacity to publications, a service on the censoring of advertising. I would like to be able to maintain a unit in the Food and Drug Administration to discuss fairly and freely, for the purposes of censorship, the extent of advertising claims.

"Then advertisers would not be in position to say that they could not find out how to proceed to censor their advertising.

"Such a plan would be valuable only to firms that wanted to reflect the truth in advertising. There would be nothing to require manufacturers or advertisers to go to the Department for information and advice. Some publications would doubtless decline to accept this service. Some others would gladly avail themselves of the opportunity offered.

"That would not bring about general and complete revision of advertising, but would give those who want to do such things voluntarily, helpful aid. Some publications have thought highly of this suggestion.

"Legislation would be required to give the Department the necessary authority to carry out this service. An increased appropriation would also be necessary for the maintenance of a unit versed in food and drug matters, to do this advisory advertising censoring work."

The plan suggested by Mr. Campbell is quite different from that proposed in the Copeland bill. Speaking of the latter, its sponsor, Senator Royal S. Copeland of New York, admitted that the bill might need amendment.

"If it is a good bill," said he to Drug Markets, "then it ought to pass. "If it is not a good bill, then there is no glory in the mere passing of a bill. It should receive consideration. If it ought to be amended, then let us amend it."

As the bill is construed by drug control experts, it would mean that if a dealer falsely advertised a proper product legitimately labeled by a manufacturer, the latter would not be held responsible, but the goods in question would be liable to seizure in the state to which it was shipped and in which it was falsely advertised, as alleged.

The Federal Trade Commission's work in alleged false advertising cases does not seem to have made so much progress recently, partly due to change in personnel of the special board on advertising control. James A. Horton, who was for a long time chairman of that board, has been transferred and prompted to be assistant chief examiner on the staff of the Commission, where his duties will be wider in scope.

Interdepartment Conference Likely

Commission people have had under consideration the possibility of holding a conference with Department of Agriculture officials this Winter, with a view of bringing about closer cooperation between the two branches of government in dealing with cases involving the alleged false advertising of foods and drugs. One suggestion heard at the Commission was that one or more experts from the Food and Drug Administration be assigned, whole time, to work with the Commission in considering therapeutic claims in the advertising of drugs and health claims with reference to the advertising of food products.

When asked about this proposal, a high official of the Department of Agriculture expressed the belief that legislation would be required to carry it out. The arrangement suggested had been likened to that under which Dr. Norris of the Food and Drug Administration is assigned to work with the Post Office Department in the consideration with fraud order cases involving quack remedies and the like. It was pointed out, however, that the arrangement referred to was authorized under a general provision of law for the Food and Drug Administration to cooperate with certain other departments of the federal government and with the states.

If the Copeland bill were enacted into law it is assumed that the Federal Trade Commission would give no further special consideration to alleged false advertising statements concerning drugs. This would be under the general principle that a provision of law specifically directing how and by whom a certain thing shall be done takes precedence over a general provision under which some other part of the government might attempt to do the same thing in a different

way. The Commission might under such circumstances continue its work as to false advertising of other classes of goods than drugs, if the courts uphold its power.

It is suggested at the Department of Agriculture that Congress could provide for dealing with drug advertising by authorizing a procedure comparable to that provided for in the packers and stockyards act, which in turn incorporated certain provisions, practically verbatim, from the interstate commerce and the federal trade commission acts. Under the packers and stockyards act there is a cease and desist procedure provided for, which could be applied to advertising. If an alleged illegal practice develops under the packers and stockyards act the firm concerned is notified and given a hearing by the Secretary of Agriculture. If he is satisfied that there is violation of law he may issue an order for the firm to cease and desist from the practice complained of. If the practice continues despite such an order, criminal prosecution may be instituted. This procedure is somewhat similar to that of the Federal Trade Commission.

Special Commission Suggested

Others in the Department would prefer still some other method of dealing with the situation. One suggestion heard at the Department is that there might be a special commission or board set up, either inside or outside the Department to handle false advertising under authority of law more specific than that under which the Federal Trade Commission operates.

In this connection a suggestion has been heard that a special board or commission might hear and try cases of various kinds arising under the food and drugs law, including false advertising cases. This suggestion is based partly upon the thought that some time the Supreme Court may decide that multiple seizures of drug products are not permitted under the law. In that event, it is pointed out, the Department would have to stand or fall on the trial of a single case involving the labeling of any product. In any other case involving the same product there would be a cry of "res adjudi cata."

Under those circumstances, it is believed by some officials, those enforcing the food and drugs law would be better off if they had an expert body, a commission or board of specialists before which to try such cases, rather than to have to take chances involved in trying such cases before judges and juries of all kinds in courts all over the country. It is declared that some courts have no adequate knowledge of the food and drugs law and do not appreciate some of the points involved; that sometimes courts and especially juries are influenced by local conditions.

In view of this situation, those favoring the special board or commission plan for handling advertising and/or other cases arising under the food and drugs law say that after hearing such a case the commission or board could issue an order or an injunction, which would go out to United States marshals and other officers throughout the country, directing them to seize the drugs or medicinal products involved, to stop their shipment in interstate commerce, and so on. Under this system also, it was said, the system of criminal prosecution for adulteration or flagrant misbranding of goods could be retained.

Mr. Campbell pointed out that if a special commission or board were set up, inside or outside the Department to consider food and drug cases, including advertising, its rulings and orders would have to be subject to review by the courts, under the general constitutional provision that citizens are entitled to the protection of due process of law. "Due process of law means consideration of cases by the courts," said Mr. Campbell. "With a special commission or board system we would not be any better off than we are today." He went on to say that under various other regulatory laws administered by the Department court review is provided for, as it is indeed under the food and drugs law as at present administered.

A Special Court Desirable

"A special court to handle false advertising cases, or other food and drugs act cases would be better than a board or commission," declared the Director of Regulatory work, who referred to other special courts of the federal government, such as the Court of Claims, the Customs Court, the Court of Customs and Patent Appeals, the former Commerce Court and so on, to hear special classes of cases.

The last sentence in the Copeland bill is believed to need attention and revision, in order to clarify it. The sentence reads as follows:

"No such advertisement, representation, or description shall be held to constitute misbranding for a period greater than six months after such advertisement, representation, or description was made or published."

This language has been unofficially construed differently by a great many people. According to some, it may mean that a period of six months grace would be allowed within which advertising copy could be cleaned up and made to accord with the facts. According to another interpretation, the intent is to set up a statute of limitations, to provide that after an advertisement is circulated for six months it may not be attacked as "false and deceptive." A third possible interpretation suggested is that a ruling that a certain advertisement is "false and deceptive" would be in effect for only six months, after which the advertisement would have to be attacked again, or else become legitimatized.

Some of these interpretations may seem fanciful, but they have been seriously advanced by serious-minded persons. Frankly, Department officials don't know what the provision quoted above does mean. Nor do drug trade people.

IN THE SPOTLIGHT

William Jay Schieffelin, President of the Druggists Supply Corporation, presided as toastmaster at the New York Drug Trade Dinner

Percy C. Magnus, whose initiative and industry as Chairman of the Drug and Chemical Section of New York Board of Trade produced the largest drug trade dinner

S. S. Neuman, President of Publicker Alcohol Company, now heads the Industrial Alcohol Institute as its President

Frederick Sweet Stearns II, the fourth generation of the Stearns family, has entered the employ of Frederick Stearns & Company which his grandfather founded 67 years ago

Greatest Drug Trade Dinner

IN A year when uncertainty as to business conditions still hangs in the air, the Drug and Chemical Section of the New York Board of Trade did its best to dispell the uncertainty by bringing together at the Hotel Commodore a record breaking attendance of just under six hundred representatives of the drug and chemical industries at its sixth annual dinner.

Surpassing any previous function not only in the size but also in the type of attendance, the reception and the dinner proceeded with the utmost smoothness and with a feeling that the men present were making contacts under the most pleasant conditions.

The reception which started at 6.30 and continued until dinner was served about 8.00, was a wonderful sight. Friends and competitors met in a place where business was taboo, and discussions of things less taxing to the mind.

The dinner was served in an excellent manner, with strolling Italian entertainers roaming around the room.

The speakers were impressive and the large room was filled with the diners until the last man had finished his talk.

Percy C. Magnus, chairman of the Drug and Chemical Section, whose hard work and ability to organize and direct the various committees working on the dinner was very largely responsible for the outstanding success, made a short talk and promptly introduced the toastmaster, William Jay Schieffelin, president of the Druggists' Supply Corporation.

Dr. Schiefflin proved a most able and entertaining toastmaster introducing first H. V. Kalterborn who gave an address on political conditions in the various countries of the world that held those present to rigid attention whether they agreed with Mr. Kalterborn's views or not.

Dr. Royal S. Copeland, U. S. Senator from New York, followed Mr. Kalterborn. Dr. Copeland, speaking of investigations, which naturally were discussed by prior speakers due to the conditions surrounding New York City at the present time, stated that it was good advertising for honest men to be investigated as evidenced by his opinion of the drug manufacturing industry after sitting for thirty days through the recent investigation of the Food and Drug Administration and the drug manufacturers in the Senate Committee.

Count Ernesto Russo, a humorist, completed the corps of speakers.

Louis K. Liggett, of Boston, president of the United Drug Co., as that concern's contribution to Red Cross drought relief in Arkansas, recently wired his agents in Arkansas to fill medical prescriptions for the needy free of charge. Mr. Liggett so notified Judge John Barton Payne, Chairman of the American Red Cross. All Rexal Drug Stores filling such prescriptions will be reimbursed by the United Drug Co. Prescriptions must be written and certified by registered physicians.

J. L. Hopkins & Co. have recently acquired the services of P. Dutcher as factory superintendent. Mr. Dutcher has had long active experience in the milling and manufacturing of crude botanical drugs, having for 14 years been factory superintendent of R. Hillier's Son Co.

B. & W. Co., Inc., manufacturers of lanoline, announce the change of their name to Bopf-Whittam Corp. Manufactory and general offices are at 526-532 North Ave., Westfield, N. J. where they have been located for many yeears. There has been no change in the personnel of the organization.

Colden Peacock, Inc , Paris, Tenn., announces a recent affiliation with Robert P. Gust Co., Inc., to have charge of the marketing of Colden Peacock Bleach Creme on the west coast. An intensive radio campaign, supplemented with magazine advertising, is in progress now in the section of the country centered by Los Angeles.

New Patents Reveal--

UNITED STATES PATENTS

Iodine from Waters

First step in process is to neutralize the spring water by mixing it with an exceedingly small amount of acid and approximately the theoretical quantity of potassium permanagate. The extracted iodine is then immediately adsorbed thereafter. Frits Ellinger, The Hague, Holland, assignor, Mijnbouw en Handelsmaatschappij "Wonoh Gedeh," The Hague, Holland. U. S. P. No. 1,775,897,filed March 7, 1929.

Medicinal for Intravenous Use

This medicinal product contains a special form of phenylcinchoninic acid. This acid is first treated with sodium bicarbonate for the purpose of destroying the acidity, and is then used in solution with hexamethylenetetramine for intravenous medication. A. W. Larson and A. K. Epstein, Chicago, U. S. P. No. 1,775,133 filed December 22, 1925.

Loose Powder Container

This container has usual top and bottom members, one of which is designed for receiving loose powder and other arranged to carry mirror. A circular member, with parallel spaced inwardly projecting flanges, frictionally engages wall of powder receiving member to form powder compartment with it. One flange is wider than other and is arranged below other when in position. An applicator is disposed below other flange when in position and an applicator is retained between flanges by spring action. J. L. Younghusband, Chicago, U. S. P. No. 1,775,182, filed September 4, 1928.

Bottle Stopper

Body of stopper has head and shank. A cup with screw thread in it is connected to turn on shank. There is chamber within cup between cup and end of shank. A valve is movable in chamber. Cup has port in base and in body of stopper. There is also a passage in it for flow of liquid. Means are carried by shank cooperating with cup for turning cup by shank when shank is turned in one direction and these means permit cup to remain stationary when shank is turned in opposite direction. G. F. Pinsuti, New York, U. S. P. No. 1,775,292, filed January 12, 1928.

Inactive Menthol

Process of manufacturing inactive menthol, that is the racemate of natural menthol, consists in heating solid inactive isomenthol with hydrogenating catalysts and hydrogen with simultaneous agitation and separation from the reaction product of inactive menthol by physical fractionation. In another process, covered by second of following patents, liquid mentol mixtures are subjected to freezing operation. These mixtures are obtained from fractional distillation of synthetic menthol mixtures as first fraction of operation. Deposited solid inactive neomenthol is separated. After inactive neomenthol has been separated, liquid menthol mixtures are subjected to fresh fractional distillation. Fraction boiling at 216.5° C. at 760 mm. containing incative menthol is separated. K. Schoellkopf, Dusseldorf-Oberkassel, and A. Serini, Dusseldorf-Heerdt, Germany, assignors, Rheinische Kampfer-Fabrik Cesselschaft m. b. H., Dusseldorf-Oberkassel, Germany. U. S. P. No. 1, 776,087-8 filed June 29 and 30, 1927.

Water-Soluble Carbonates from Betatribromoethyl Alcohol

New products obtained, have the following general formula, probable:-Br_3:C.CH_2.O.CO.OR.N(R_1) (R_2). R represents an alkylene group, R_1 and R_2 represent alkyl groups. The products are colorless crystals, soluble in water and alcohol and nearly insoluble in ether. They exert valuable narcotic properties. J. Callsen, Elberfeld, Germany, assignor, Winthrop Chemical Co., New York, U. S. P. No. 1,775,587, filed April 15, 1929.

Permanently Sterile Injection Liquors

These liquors contain a novocaine and a small quantity of a solution of vuzino-quina-alkaloid. E. Schulze, Hannover, Germany, assignor, K. Schrader, Hannover, Germany. U. S. P. No. 1,776,010, filed July 23, 1925.

Purifying Ergosterol

The improvement of this process over the one ordinarily used consists in crystallizing ergosterol from mixture of acetone and ether. C. E. Bills, Evansville, Ind., assignor, Mead Johnson & Co., Evansville, Ind., U. S. P. No. 1,775,548, filed April 9, 1928.

Di-isopropyl Carbonyl Compounds

One of these compounds, is di-isopropyl benzaldehyde, which has following formula:—$(CH_3)_2CH.C_6H_3.C:O(H)$. $(CH_3)_2CH$. This is thick colorless liquid with boiling point between 147° to 153° C. at 12 to 13 mm. A. Knorr, Berlin and A. Weissenborn, Potsdam, Germany, assignors, Winthrop Chemical Co., New York U. S. P. No. 1,776,154, filed July 5, 1928.

New Drug

The new drug has the chemical name,6:8-dihydroxyquinoline ether. This product distills under 2 mm. pressure at 153° C. It melts at 60° C. and it is recommended for treatment of intestinal troubles. F. Mietsch and H. LKloes, Elberfeld, Germany, assignor, Winthrop Chemical Co., Inc., New York, U. S. P. No. 1,790,066, filed September 7, 1927.

Enzymitic Products

This patent is concerned with manufacture of an enzymitic product, which consists of dessicated mood cultures and plasmolyzing and dehydrating salts. C. J. M. M. le Petit, Anneville-sur-Mer, France, assignor, Roehm & Haas Co., Philadelphia, Pa. U. S. P. No. 1,779,243, filed October 23, 1928.

BRITISH PATENTS

Digitalis Glucosides

A new glucoside is obtained by stirring total glucosides of leaf of digitalis lanata with acetone or methylethylketone, filtering, fractionally precipitating filtrate by addition of water, removing solid which separates, adding salt to clear liquid, drying precipitate now formed, and extracting it with methanolor ethyl alcohol. On adding water to solution and standing, crystals of new glucoside separate. Product may be freed from more soluble glucosides by boiling with small quantities of chloroform, acetone, or methylethylketone, and then recrystallizing from solution in hot 80% methanol or ethyl alcohol. It may also be crystallized by adding water or ether to solution in pyridine. Further quantities

of glucoside may be obtained from filtrate remaining after precipitate formed by adding has been separated, by extraction with aid of cold chloroform. Chloroform extract after evaporation is purified by stirring with acetone or methylethylketone, boiling with small quantities of chloroform, and crystallizing the sparingly soluble portion as heretofore. Further quantities may also be obtained from initial glucosides insoluble in acetone or methylethylketone and from precipitate formed by adding water to solution therein. In each case residues are purified by fractional crystallization from hot dilute alcohol, boiling less soluble fractions with acetone, methylethylketone, or chloroform, and recrystallizing undissolved portions as before. Wellcome Foundation Ltd., London and S. Smith, Dartford, Kent. England. B. P. No. 337,091, filed August 8, 1929.

Synthetic Drugs

Acetates of 9-aminoacridine or its substitution products, which are readily soluble in water, are prepared by treating base with acetic acid and isolating the product. Compounds are intended for therapeutic use. Examples are given of preparation of acetates of 7-ethoxy-3:9-diaminoacridine, 9-aminoacridine,7-methyl-9-aminoacridine and 3:9-diaminoacridine. I. G. Farbenindustrie A. G., Frankfort-on-Main, Germany. B. P. No. 337,136, filed September 19, 1929.

Treating Physiological Liquids

This patent is for manufacture of halogenated hydroxy-arylmethanes,antiseptics and fungicides used for treating physiological liquids and surgical appliances. Physiological and pathological liquids, such as bood, and articles and materials coning into contact with such liquids, such as bandages and sanitary towels, are treated, to prevent decomposition by bacteria, molds or like micro-organisms, by addition thereto of small quantity of a hydroxy-arylmethane or hydroxy-triarylmethane containing one or more monovalent phenol residues containing chlorine or bromine. Examples of suitable compounds are methylene-bis-2:4-dichlorophenol, the condensation products of formaldehyde with two molecular proportions of para-chlorophenol or meta-chlorophenol, or 6-chloro-3-cresol, or 6-chloro-2-cresol, condensation products from para-chlorobenzaldehyde or para-diethyl-aminobenzalde-hyde and two molcular proportions of chllrophenol, a product obtained by condensation of cyclohexanone and two molecular proportions of phenol and after treatment with glacial acetic acid solution of bromine, etc. I. G. Farbenindustrie A. G.,, Frankfort-on -Main, Germany. B. P. No.337,473, filed May 1, 1929

Cancer Remedy

Remedies for prevention or treatment of cancer are obtained by extracting gall bladders of animals with alcohol, ether, or other solvent and evaporating extract to dryness. Product is preferably dissolved in aqueous solution of chloride or other compound of potassium and is used for injection into affected organ. Gall bladders are preferably obtained from animals known to be immune from cancer, such as hares, and are freed from contained gall before extract is made. H. Leitner, London, England. B. P. No. 337,797, filed July 8, 1929.

Purine Bases and Fats

Purine bases are extracted from natural materials containing them by means of liquid sulphur dioxide; fats may also be extracted at same time. Extraction may be effected in cold or at raised temperature, and material may be preliminarily treated with another reagent, for example an alkali solution. In an example, cocoa is extracted with liquid sulphur dioxide in rotatable pressure vessel at 45° C., and extract is filtered and cooled, yielding solution of theobromine and caffeine and layer of separated fat. Extraction is repeated several times, preferably at higher temperature, for example 100° to 105° C. and extract is worked up in known manner. Tea dust may be extracted similarly for recovery of caffeine and theophylline. Extraction of ground cocoa shells is referred to also. C. F. Boehringer & Soehne, Waldhof, Mannheim, Germany. B. P. No. 338,057, filed January 7, 1930.

Synthetic Drugs

Gold compounds of succinimide are prepared by reaction between chloroauric acid or gold hydroxide or salt of aforementioned acid, or of fulminating gold, with succinimide in presence of base. Reaction may be carried out in solution, and such solvents as alcohol may be employed in process. Reaction may also be carried out at elevated temperature. Products obtained possess special therapeutic properties. A large number of example of preparation of various gold compounds of above type are given in original patent. Sir W. J. Pope, Cambridge, England. B. P. No. 338,506, filed July 19, 1929.

Closures for Collapsible Tubes

Collapsible tube or continer is provided with removable clip or cover, for preventing contents from being accidentally discharged after tube has been put into use. Central portion of clip is curved downward to contact with and press against slitted diaphragm. Covers may comprise a disc secured in position by a gummed paper strip. C. Fowler, Geneva, Switzerland. B. P. No. 338,554, filed August 19, 1929.

GERMAN PATENTS

Therapeutic Compounds

This patent is for manufacture of therapeutically valuable compounds from esters of para-aminobenzoic acid and camphor. The chemical reaction between these esters and camphor is allowed to take place in presence of solvents. The reaction may also take place in their absence. Dr. E. Ritsert, Frankfurt-am-Main, Germany. G. P. No. 498,433, filed October 11, 1927.

Thymol

Process consists in treating oxythymol, with hydrogen in presence or absence of solvents. It is accomplished by means of a hydrogenating catalyst and in certain cases under pressure and at high temperatures until two atoms of hydrogen are absorbed. Catalytic metals are used for a purpose. Schering-Kahlbaum A.G., Berlin, Germany. G. P. No. 498,281, filed November 25, 1927.

Toxic Irritants

Residues obtained according to German Patents Nos. 254,769, 268,995 and 270,010, are extracted with alkaline water and solution is evaporated and filtered. Filtrate is treated with acid and, after resulting precipitate has been removed, filtrate is precipitated with trichloro-acetic acid or tannin. Kalle & Co. A. G., Biebrich am Rhein, Germany. G. P. No. 498,231, filed April 4, 1924.

Dry Yeast for Medicinals

Fresh cereal yeast or mineral yeast is treated with alcohol at 55° to 65° C. after being treated with water or dilute alkali. Matro G.m.b.H., Heilbronn am Rhein, Germany. G. P. No. 498,078, filed April 5, 1925.

Making Topovaccines

This process is concerned with the preparation of bacteria-free, highly resistant inoculation serums. These are made from bacterial cultures, such as staphylococci, streptococci, etc. Liquid bacterial cultures about two weeks old, bacterial body fluids or extracts of bacterial cultures are rendered bacilli-free by filtration or centrifuging. Then filtrates are inoculated anew with similar

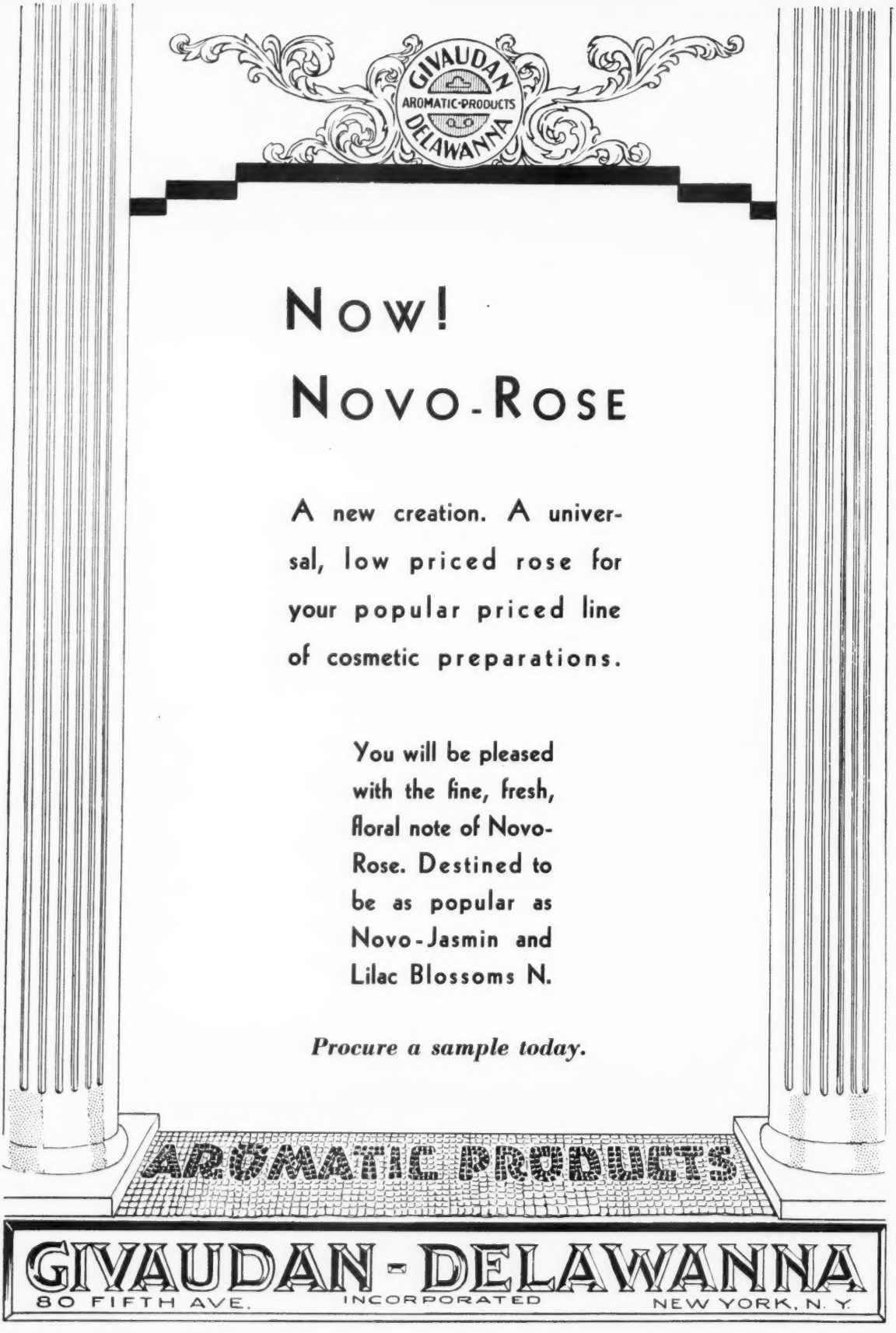
(*Continued on page 268*)

Gathering clary sage plants in Southern France

Clary Sage

AS THE trade knows, the clary sage plant took on great popularity in the so-called Grasse region of Southern France during the past few years, due to a favorable market for oil of clary sage. When the growers of perfume-flower plants saw that the clary sage could be grown at a good profit, very many of them established plantations. The clary sage plant grows very easily, causes comparatively little trouble, is relatively easy to gather, and, consequently, over-production was the result. According to a brief, but highly interesting, work on clary sage by Pierre Dhumez, the principal centers for this culture in the Grasse section are Montauroux, valley of the Siagne, Saint-Jaques and Saint-Jean, near Grasse, Vignal, near Opio, Argeville, near Mougins. These centers are large producers, but into the general account must be taken the numerous small plantations spread throughout the entire region. It should also be mentioned that the clary sage is grown along relatively modest lines in the Lyonnais, Gard, Vaucluse and Var districts of France.

Close-up of clary sage plants in full flower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Since the first great burst into popularity the clary sage of the Grasse region has seen a considerable decline, and the price of oil of clary sage saw a decided downward movement. Recent prices were given as rock bottom, with the information that this year's crop will not be very large, due to the over-production scare of the past season. It is, therefore, held that oil of clary sage is due to see another upward trend, particularly if the stocks now existing move into production at a fairly rapid and consistent rate.

Back in June, 1929, oil of clary sage was quoted, nominally, at 4 to 5,000 francs ($160 to $200) per kilogram, whereas recent quotations run to something like 1,200 francs ($48), showing a tremendous drop. In fact, it is said that oil of clary sage can be picked up at almost any price, as low as 800 francs ($32), from those in need of money at the present time. This latter price may be exaggerated, and will, no doubt, not remain even a rumor in the face of this year's comparatively small yield, as predicted.

Some twenty years ago, oil of clary sage was barely known to the trade in the light of an indispensable. True, it was recognized as being an excellent fixative for extracts, etc., but the scope it has shown since went almost wholly unnoticed. Today oil of clary sage enters into a great many compositions, and the manufacturing perfumer has found a product that can be relied upon for certain sought after modern tones.

Sources of Clary Sage

Clary sage is known as *Salvia sclarea* L., and is native to Northern Africa and Southern France. Cultivation of this interesting plant is carried on extensively in France, as already mentioned, whereas in Northern Africa relatively little has been done with this culture. Northern Italy also produces a considerable amount of clary sage, and it has now been adapted to growth in Germany and Holland, although the clary sage grown in the two last-mentioned countries produces an oil that is different from that taken when treating the French plant. The Italian oil resembles somewhat the French oil of clary sage.

In addition to its use in the toilet preparations industry, oil of clary sage is employed as a flavoring, particularly wines and certain foodstuffs. Growing wild in parts of France, the French peasants use the clary sage in connection with their family or home remedies. The plant is called by these peasants "toute bonne," or, literally, all good. In Hungary the clary sage is grown for the pharmaceutical trade and exported to Germany, the district best known for this type of clary sage being Kolozsvar. Very little of the clary sage grown in France finds its way into the channels of the pharmaceutical trade, although this plant is still used among the peasants, as indicated, and other people who rely upon the old popular home remedies for this or that ailment.

The word sage comes from the latin *salvia*, which is derived from *salvare*, to save. Clary comes from the Latin *sclarea*, and is a kind of pot-herb. It is, of course, common knowledge that the sage was regarded by the Greeks and Romans as being a sacred plant, with the power to save a man. Charlemagne also sang its praises.

It is difficult to define the odor of oil of clary sage, one writer stating that it has the odor of sage, but without the marring effects of camphor, something of the lavender and amber, honey and oriental tobacco. Another writer, in Les Parfums de France, says: "That which gives to clary sage its great value and justifies the high esteem in which it is held, is its remarkably delicate scent, with a note both of ambergris and musk, odors very rarely associated, and in this case particularly nicely balanced."

According to Fouquet, oil of clary sage is obtained by distilling the tips of the *Salvia sclarea*, or *Orvale*, L., belonging to the labiates. It is a pale yellow liquid, with density at plus 30°: 0.895 to 0.905. Solubility: practically insoluble in pure alcohol. In solution in 96° alcohol it forms, when shaken, a veritable milk-like product, which, when at rest, separates into two parts. At the bottom a liquid mass, milky and flakey, and above the strong alcohol perfectly limpid. If the solution is again shaken, the same milky effect is produced.

The book recently published by Fouquet is recognized as being authoritative in every respect, and in that work he calls oil of clary sage: "Essence précieuse, trés bon fixateur," which means, freely translated, "Valuable oil, very good fixative." Furthermore, Fouquet is regarded as being a practical man of the trade, with many years of experience to his credit in the compounding of perfumes and various kinds of toilet preparations.

Description of Plant

A description of the clary sage plant is given as follows: The leaves at the base are very large, thick, goffered, hairy, gray, elliptical, slightly crenated at the edges, like certain kinds of tobacco. From the central rosette, which is sustained by a strong root, extends a sheaf of vigorous stems, which may attain a length of 1 meter 50 centimeters. These stems carry the same form of leaves as those of the base, but smaller in size, graduated, up to the flowering part of the plant, where these leaves are replaced by bracts, leaves or scales below the calyx. These bracts are the characteristic part of the plant. They are very large, orbicular, and form verticils, or whorls, which contain the flowers, seeming to protect them. The tip of the stem has on it a small bouquet of these bracts, as is the case with the lavender known in French as stoechas.

The bracts and corollas vary as to color, being anywhere between a clear blue and pink, also mauve and white.

There are various kinds of clary sage, particularly the hybrids resulting from a cross with a sage grown

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in Turkestan, but, apparently, these attempts have not been very successful from the point of view of oil. The plants themselves as hybrids are of fine aspect, but it is said that the quality of oil produced is not what it should be. Furthermore, the quantity of oil is also less than that secured from the standard type of clary sage.

Opinion differs as to just how a clary sage plantation should be established, but a number of the large growers suggest, because of the fact that the clary sage is a biennial, the sowing seeds in a nursery. The small plants are then transplanted in accordance with the requirements of the year. Plantations may be established successfully on open ground or under the protection of olive trees, as desired.

The clary sage flower, ripens and is distilled in the period between spring and summer, making place for the gathering of olives, which occurs during the winter months. If planted in full open country, the clary sage plantations can, of course, be allowed to remain longer, although it is best to never retain this culture for more than two years, for the reason that a plantation after that time becomes too impoverished, with plants missing or of no value whatever.

Flowers in June-July

Flowering of the clary sage occurs in June-July, repeating in the autumn, although this second flowering produces an oil of inferior quality, when compared with that secured from the first flowering.

When the flower has been open for several days and is just at the point of turning to seed, the tips of the plants are cut, and these are distilled. The yield varies greatly, depending very much upon the maturity allowed for, the amount of stems and leaves present with the flowers when treated. Roughly speaking, one requires a thousand kilograms of flowers to obtain one kilogram of oil.

In the brief work on clary sage, cited in the opening paragraph of this article, the density of oil of clary sage is given as between 0.896 and 0.930, with a rotatory power of -11° to -63°. Samples were also examined—samples of absolutely pure oil of clary sage—for which the density was found to be 0.894.

Chemical studies pertaining to the clary sage have revealed that it contains a considerable quantity of linalyl acetate, anywhere from 40 to 70 per cent. It has also been noticed that plants grown in dry soil contain more ethers than those taken from moist, or irrigated ground, a fact which is easily explained by taking into account the correlation between the rapidity of the growth and the formation of terpenic properties.

A writer in Les Parfums de France some time ago remarked: "We have observed in clary sage the same phenomenon as in lavender: the flowers distilled alone give an oil richer in ethers than does that from the entire plant taken from the same lot and distilled the same day. The flowery tips represent about one-half the weight of the entire plant, and the stalks and leaves yield very little oil. The entire plant ought, therefor, to give an oil practically as rich in ethers as the tips the total yield only being lower. In view of the fact, that we observed precisely the contrary, it is to be supposed that, during distillation, the stalks and leaves have a destructive effect on the ethers, and that there is a certain advantage in distilling the tips alone, or at least separately."

It is interesting to note that it is practically impossible to produce a synthetic clary sage oil, according to authorities on the subject. A synthetic oil of clary sage does not give the smell of musk and ambergris, it is held, found in the pure essential oil. Naturally, the demand for the natural product has gone to figures that no one even suspected a comparatively few years ago.

Rolet, in his work on perfume-flower plants, states that the rectified, terpeneless oil of clary sage is very soluble, even in an alcohol of 50°, pointing out that the oil obtained by means of volatile solvents is practically insoluble in alcohol, due to the fact that it contains a thick, viscous gum-resin. Steam distillation cuts this in half, it would appear, making it a popular process among many distillers.

Various Uses for Oil

Oil of clary sage, because of its peculiar properties, is used in the preparation of eaux de Cologne de luxe, replacing the musk, amber, thus giving to the liquid the qualities demanded in an eau de Cologne de luxe. It is also employed in modern extracts of Chypre, ambered or musked bouquets and preparations, including clover, fougére, new mown hay, orchid, carnation. The terpeneless oil, added to oil of violet leaves, gives an imitation of origanum or marjoram.

Rolet mentions that oil of clary sage is bought in considerable quantities by the manufacturers of synthetic products, and that it gives to neroli, tuberose, mimosa, narcissus, a desired freshness and suavity. Generally speaking, oil of clary sage softens the sometimes hard tones of a synthetic compound, at the same time fixing the perfume of that compound or composition.

Distilled water of clary sage is used by certain manufacturers of toilet preparations to prepare compositions requiring little or no alcohol, to satisfy the trade requirements of countries like Egypt.

With several cubic centimeters of an alcoholic solution of terpeneless oil of lemon, orange, etc., one may produce a kind of non-alcoholic eau de Cologne. The distilled water of clary sage also enters into the manufacture of mint alcohols, dentifrices, etc.

To produce a particularly interesting product, for certain uses, some distillers treat a combination of clary sage and lavender flowers.

The flowers of the clary sage plant are also used as an infusion, or aromatic tea, many people finding it a highly pleasant, as well as beneficial, beverage.

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AN INTERESTING type of cosmetic, which is really more than a simple cosmetic as it has a healing function to fulfill, is the preparation used for the hardening of soft nails. Tincture of myrrh forms a principal ingredient of these compositions. Such a preparation consists for example of ten parts by weight of tartaric acid, ten parts by weight of tincture of myrrh, twenty parts by weight of alcohol and the same proportion of water. The tartaric acid is dissolved in water and then the tincture of myrrh and the alcohol are mixed with this solution. The mixture is allowed to settle and then it is filtered. Tannic acid solutions are also used to paint the nail in order to make them hard. Formaldehyde has not been recommended for this purpose, although it appears to have distinct advantages in this connection. Soap and alkali should not be used by any means, as they will tend to soften the nail rather than make it hard.

Too hard nails may be treated with the following preparation:—thirty parts by weight of oil of sweet almond, three parts by weight of talc and three parts by weight of ammonia. The pulverized talc and the almond oil are rubbed together to make as fine as possible a paste and this paste is placed in a bottle to which the ammonia is then added and the mixture thoroughly agitated.

A preparation which is useful for removing traces of powder from the skin contains glycerin as the basic substance. Such a preparation is obtained by mixing together 150 parts by weight of pure glycerin 28 degrees Be concentrated, fifty parts by weight of witch hazel extract, 800 parts by weight of alcohol 96 per cent. concentrated and ten drops of artificial oil of roses. This mixture is applied by means of a piece of cotton, cotton waste and the like. Another preparation calls for the use of 150 parts by weight of pure glycerin 28 degrees Be concentrated, fifty parts by weight of spirits of camphor, 750 parts by weight of alcohol 96 per cent. concentrated and forty parts by weight of distilled water as well as ten drops of artificial oil of roses.

Cucumber milk and glycerin preparations are also interesting cosmetics. It is decidedly more advisable to prepare the cosmetic without the use of resin, tincture of benzoin. A preparation that is highly recommended is made in the following manner. First five parts by weight each of spermaceti and stearin and fifteen parts by weight of white wax are mixed together. Second a mixture of fifteen parts by weight of medicinal soap powder and 150 parts by weight of pure glycerin 28 degrees Be concentrated is made. The third mixture consists of three parts by weight of borax, three parts by weight of potash and five hundred parts by weight of warm water. The fourth mixture contains five parts by weight of lavender oil of the type used for soaps, 150 parts by weight of 96 per cent. concentrated alcohol and three hundred parts by weight of glycerin. The fifth ingredient mixture is 350 parts by weight of cucumber juice.

The milk is prepared in the following manner. The first mixture is melted on a water bath. Then the third mixture is added to the melted mass and thoroughly stirred into it. Thereupon the second, fifth and fourth mixtures are added singly and in the order indicated. The mass is taken from the water bath and thoroughly worked up until it is cooled down.

Almond-cucumber-glycerin milks are also made with the further addition of almonds. Thus twenty parts by weight of sweet almonds, which have been freed from their shell by scalding with hot water, are crushed flat with one hundred parts by weight of water. The fourth mixture, which has been described above, is added to this mass and it is finished as described before. After both of these preparations have been made, they must be passed through a dense filter cloth.

Another method of making cucumber milk is as follows. Fifty parts by weight of cucumber seeds are pulverized in a mortar and made up into an emulsion by the addition of six hundred parts by weight of water. The mixture is then passed through a screen. A solution of 0.01 parts by weight of vannilin in two hundred parts by weight of 95 per cent. concentrated

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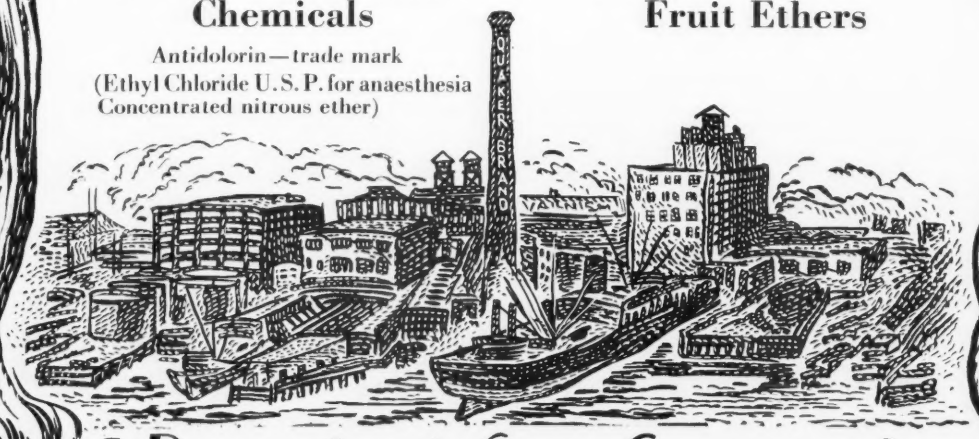

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alcohol is then made, which solution also contains numerous perfumes in the following proportions:—one drop of ionone, two drops of perpineol, two drops of linalool, two drops of ylang-ylang oil (artificial), two drops of geraniol, ten drops of hydroxycitronellal, three drops of phenylethyl alcohol, three drops of citronellol, three drops of lemon oil, five drops of oil of bergamot and three drops of neroli oil. Two hundred parts by weight of glycerin are then mixed with the emulsion and the perfume solution.

The best results obtained in the removal of beards on women are with preparations containing hydrogen peroxide. The hair is bleached and gradually becomes brittle and the roots are decomposed. A pomade which is recommended for this purpose contains 0.15 parts by weight of acetanilide, thirty parts by weight of lanolin and six parts by weight of one hundred per cent. by volume hydrogen peroxide. A liquid preparation contains ten parts by weight of hydrogen peroxide, five parts by weight of benzine, distilled water and spirit. ana as required.

It is suggested that the following composition, which is based on the various point which have been made above, will give good results as a fat reducing bath salt. The preparation is made from 200 parts by weight of sodium bicarbonate, 150 parts by weight of tartaric acid, 200 parts by weight of starch, 50 parts by weight of borax, 100 parts by weight of anhydrous sodium sulphate and 300 parts by weight of soap, which contains about seven per cent. of cimol. Various perfumes may be added, such as eau de Cologne, lavender and violet. A suitable perfume consists of five parts by weight of oil of rosemary, half a part by weight of citral, two parts by weight of linalyl acetate, two parts by weight of methyl anthranilate and parts by weight of geranium oil.

A somewhat new idea in this field of the cosmetic industry is the addition of fatty oils to the bath water. This is valuable from a cosmetic standpoint. The oil has a beneficial action on the skin. The addition of oil as such to the bath does not do much good, if any, for the oil will float on the surface of the water and not be distributed through the bath. It is much better to use the oil in the emulsified state. This can be obtained by using such emulsifiers as soap, turkey red oil and the like. For example one hundred parts by weight of olive oil are mixed with twenty parts by weight of a thirty per cent. potash-olein soap and two parts by weight of turkey red oil and then the mixture is heated until the mass becomes clear. This preparation can then be added to the bath. It is also advisable to add about two parts by weight of formaldehyde so as to improve the keeping qualities and about five parts by weight of a flower oil are added to perfume the preparation.

In order to protect the body against taking cold after these weight-reducing it has been customary to use alcoholic toilet waters, eau de Cologne and lavender water. A new product for use in the place of the toilet water is a body powder. This powder is spread over the entire body and serves to absorb the water so that the chill that is produced by its evaporation is counteracted. The composition of this powder is the same as that of the ordinary toilet powder. Thus talc may be mixed with wheat starch or rice starch and also perfumes and colors in its preparation.

Body oils are also used for this purpose. Olive oil salves are best suited. Mineral oils are less useful. Pure olive oil obtained from the first pressing is preferred. Various vegetable oils, which have an irritating effect on the skin, may also be added to the olive oil. Such oils are for example rosemary oil, oil of balm mint, oil of rue, oil of juniper, oil of origanum, pine needle oil, eucalyptus oil, petit grain oil, menthol, camphor and the like. These oils may also contain fine flower oils and also from one to two per cent. of vegetable lecithin dissolved in them. For example a new product of this sort is made in the following manner. One hundred parts by weight of olive oil of the first pressing, which has been concentrated by freezing, are mixed with one and one half parts by weight of vegetable lecithin at a moderate heat, about 60° C. The heating operation is continued for so long a time until a clear solution is obtained. Then five parts by weight of the finest mineral oil are added and after the mixture has been allowed to cool down, one parts by weight of oil of rosemary and 0.2 part each of origanum oil, oil of juniper, oil of rue and artificial rose oil are added.

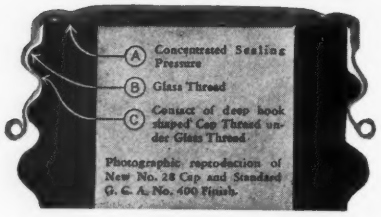
A bath preparation, which is known as a pine needle milk and which possesses a distinct pine odor and a syrupy consistency and a strongly fluorescent appearance, is a new product of this type. Thus a soap solution, 385 parts by weight, is mixed with 160 parts of glycerin and 55 parts by weight of alcohol. This soap solution is then mixed with an oil mixture, containing 308 parts by weight of pine oil, 77 parts by weight of oil of almond (sweet), fifteen parts by weight of tincture of vanilla and 0.3 part by weight of oil of cardamon. Five parts by weight of fluorescein and ten parts by weight of a ten per cent. aqua ammonia are then added to the finished mixture.

Charles Fischbeck, Ungerer Vice-President

Charles Fischbeck, one of the leading members of the essential oil trade of New York and the vicinity, has been elected to the vice-presidency of Ungerer & Company, New York. Mr. Fischbeck has been associated with Ungerer & Company for many years, and for the last ten years he has been secretary of the company—a position which he continues to hold upon his election as vice-president. Mr. Fischbeck has always taken an important part in the conduct of the business of Ungerer & Company of which company Frederick Ungerer is president and directing head.

Liggett store prescription sales in the New York metropolitan area during January this year are reported to have been the largest for any one month during the history of the company.

A NEW AND BETTER SCREW CAP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Columbia Regulates Toiletries

MEDICINAL or toilet soaps, skin creams, hair dyes and dentifrices are brought within the purview of the pharmaceutical regulations of Columbia by a new set of regulations issued governing the importation and sale of pharmaceuticals specialties in that country.

Another important feature of the regulations, which were published on February 18, are that six months from the date of publication, or August 18, next, every pharmaceutical specialty must be labeled with its corresponding registration number. In the meantime registration numbers must be indicated on the consular invoices covering shipments of specialties to Columbia.

Complete formula of specialties must henceforth be stated upon their respective labels, in ordinary pharmaceutical terms. In the past it has been optional to show formula or not, those specialties whose labels did contain the formula being accorded preferential customs treatment.

The new regulations also restate the procedure for obtaining registration of specialties, providing that this may be requested directly by manufacturers or indirectly through duly authorized local attorneys.

Some of the articles of the new regulations are as follows:

Article 2. By specialties is meant pharmaceutical preparations produced according to formula not registered in the pharmacopoeia or usual codes of pharmacy, or those having their formula registered in some codes, and which may have suffered substantial modification.

Official preparations are also considered as specialties, that is to say, formulas registered in the usual pharmacopoeias to whose names may have been added some special designation, such as the name of a maker, which will indicate that their preparation is in accordance with a technique not commonly used. Previous to the study of the case, the Commission will determine if a preparation of the class requires a permit; otherwise the appropriate record will be required on the labels.

Article 5. Each one of the containers in which the pharmaceuticals are offered for sale, whether foreign or national, must bear on the labels the following inscription drawn up in Spanish "Licencia numero——de la Comission de Especialida-des Farmaceuticas de Columbia."

Article 14. When in granting a permit for a specialty it is determined that it should be used only with a medical prescription and formula of the preparation on the container, the omission of this requirement will be punished by confiscation of the preparations and a fine of from $50 to $90 (pesos). In case of repeated offenses of this kind, the permit will be cancelled.

Article 15. It is absolutely prohibited to show on notices or announcements of an advertising nature and on labels of pharmaceutical specialties suggestions intended to create in the minds of consumers the idea that such preparations are the only effective or unfailing remedies for the treatment of diseases to which these remedies apply.

Article 16. It is also prohibited, in agreement with the opinion of the Acedemia Nacional de Medicina, to advertise in newspapers, posters, pamphlets, handbills, illuminated signs, moving pictures or in any other manner, specialties for venereal diseases. This prohibition refers to medicines such as specifics designed to attach syphilis: blennorrhea, white chancre and those which are designated by general names as depratives, or blood purifiers.

Only those will be allowed publication which are intended exclusively for the medical corps.

Article 24. When a permit has been refused, those interested can request reconsideration of the respective Resolution within 30 days subsequent to the date of publication in the Diario Oficial in the case of national specialties and 90 days for those of foreign origin. After the expiration of this time no appeals will be considered.

Article 25. In order to facilitate the manner of making a request for reconsideration, the Commission will furnish a clear and exact statement in its proceedings of the reason why the permit has been denied.

New Products

New Patents Reveal--

(*Continued from page 256*)

bacterial cultures and again filtered after one to two weeks. The process is continued in this manner, until a completely virulent culture is no longer obtained. Chemisch-pharmazeutische A. G. Bad Homburg, Bad Homburg, Germany. G. P. No. 499,512, filed June 12, 1925.

Antitoxic Pneumococci Serum

Pneumococci are allowed to culture on liquid medium containing albumens. After proper time has elapsed to allow for growth of culture, bacteria are mechanically removed or killed. Toxins obtained in this manner, are injected into animals and antitoxins obtained in usual manner. I. G. Farbenindustrie A. G., Frankfurt-am-Main, Germany. G. P. No. 499,580, filed June 17, 1926.

Alkaloids

This process is concerned with recovery of alkaloids, volatilized by means of steam. It pertains principally to recovery of nicotine. A mash of alkaloid-containing parts of plants is obtained by means of solvents and mash is then steam distilled. Alkaloid is only incompletely distilled over in distilling column, and liquid, alkaloid-containing portion of distillation residues is used for preparation of fresh distillation mash. Dr. G. Knoth, Hamburg, Germany. G. P. No. 500,294, filed June 28, 1929.

Manufacture of Eucalyptol

Eucalyptol or 1:8-cineol is prepared from mixture of cineols which is itself made by action of water-splitting agents on different terpene compounds, such as terpin hydrate, terpineol, terpin, oil of turpentine and the like. Latter are treated with hydrating substances at temperatures below 0° C., and from hydrating mixtures in certain instances after preliminary separation of terpene hydrocarbons. Rheinische Kampfer Fabrik G.m.b.H., Duesseldorf-Oberkassel, Germany. G. P. No. 499,732, filed August 22, 1928.

Therapeutic Active Pastes and Creams

Starting point in process is concentrated salt solutions, to which are added small amounts of saponin and a hot superfatted soap cream. Mixture is agitated until cold. Pharmaport-Gesellschaft fuer Chemisch-pharmaceutische Produkte m.b.H., Berlin, Germany. G. P. No. 499,078, filed July 17, 1925.

Fixative for Perfumes

Ethers of 3:4-dioxybenzyl alcohol are used as fixatives for perfumes. The se products are made in usual manner by reduction of corresponding aldehydes. The 3:4-dimethyl ether is particularly easy to make. These products have scarcely any odor of their own and can dissolve large quantities of perfumes of all sorts. They possess additional advatage of being soluble with ease in alcohol. Patent contains various examples of preparation of these compounds. Thus iso-chavibetol and iso-eugenol, in admixture, are used as starting materials in process of making 3:4-dimethyl ether of dioxybenzyl alcohol. Piperonal is also used as starting material. So is iso-vanillin ethyl ether and diethyl ether of protocatechuic aldehyde. J. D. Riedel-E. de Haen A. G., Berlin-Britz, Germany. G. P. No. 515,332, filed December 8, 1926.

Preparation of Menthol

New condensation products obtained from meta-cresol or para-cresol and ketones, whose preapration is described in German Patent No. 486,768, can be used in manufacture of corresponding cyclohexanols, which include menthol, its homologues and derivatives. The feature of process consists in fact that condensation product can be converted into cyclohexanols, without being first subjected to thermal splitting, by action of hydrogen in presence of hydrogenating catalysts. This is true when hydrogenation is carried out to absorption of sixteen atoms of hydrogen. In this reaction a small amount of corresponding ketone, menthone, is also formed, due to fact that reaction does not go to completion.

Catalyst used in process should be of type that reduces point of thermal decomposition to such point, that absorption of hydrogen takes place best at definite temperature. Such catalysts are for example metallic phenolates or compounds, which are able to form phenolates.

Hydrogenation may also take placee with aid of simple hydrogenation catalyst, but in this case reaction ensues at high temperatures. Schering-Kahlbaum A. G., Berlin, Germany. G. P. No. 506,044, filed August 17, 1926.

Derivatives of Cholin

Cholin or salts of cholin, are made to unite in reaction with halogenides or anhydrides of low molecular weight halogenated fatty acids. Condensation products obtained are then converted into chemical homogeneities in form of complex salts, by means of urea or its derivatives. Pharmazeutische Industrie A. G. and Dr. Sufi Glaubach, Vienna, Austria. G. P. No. 499,950, filed June 22, 1926.

Conversion of Solubility of Medicaments

This process is concerned with the transformation of medicaments, which are insoluble in water or difficultly soluble in water, into a form in which they can be injected or administered in drops. In an original patent (see German Patent No. 474,343) soluble carbaminic acid esters were used and in this patent these are substituted by water soluble fatty acid amides or derivatives obtained from these compounds. Gesellschaft fuer Chemische Industrie in Basle, Basle Switzerland. G. P. No. 486,659, filed Sept. 2, 1926.

Disinfectant Material

This substance will give a clear solution with water, the solution containing free hypochlorous acid. The product is made by mixing solid hypochlorites with solid organic acids or acid derivatives, such as succinic acid, succinic acid anhydride, phthalic acid, bebzoic acid, glutaric acid, naphthalene-sulphonic acid. Dr. E. Felheim, Berlin-Lichtenrade. G. P. No. 487,868, filed Dec. 18, 1925.

Dr. Fitch Joins Pluto

Dr. William Edward Fitch, for many years one of the foremost experts on mineral waters in this country, will become medical hydrologist and medical director at French Lick Springs, Indiana, on the first of March, according to an announcement made by the French Lick Springs Hotel Company.

Dr. Fitch recently gained national recognition for his work with mineral waters when he was appointed the only American member of the International Society of Medical Hydrology's commission on standard mineral water measurements. Perhaps the most widely known of his many writings is "Mineral Waters of the United States and American Spas."

F. J. Stokes Machine Co. announce the appointment of Lloyd C. Cooley as their mid-western representative with headquarters at 75 East Wacker Drive, Chicago. Mr. Cooley, a graduate of the Massachusetts Institute of Technology, is a chemical engineer of many years experience. He was formerly with the E. B. Badger Co. and also the Swenson Evaporator Co.

Announcements of the winners of the Harvard advertising awards were made on February 28 at a banquet at the Faculty Club. Among those receiving awards were: National Campaign for Specific Product ($1,000): Gardner Advertising Co., New York, for the campaign of the Aluminum Company of America, and Campaign of Industrial Products ($1,000): Bakelite Corp., New York, with recognition to Allan Brown and Rickard & Co., Inc., for the campaign of Bakelite Corp.

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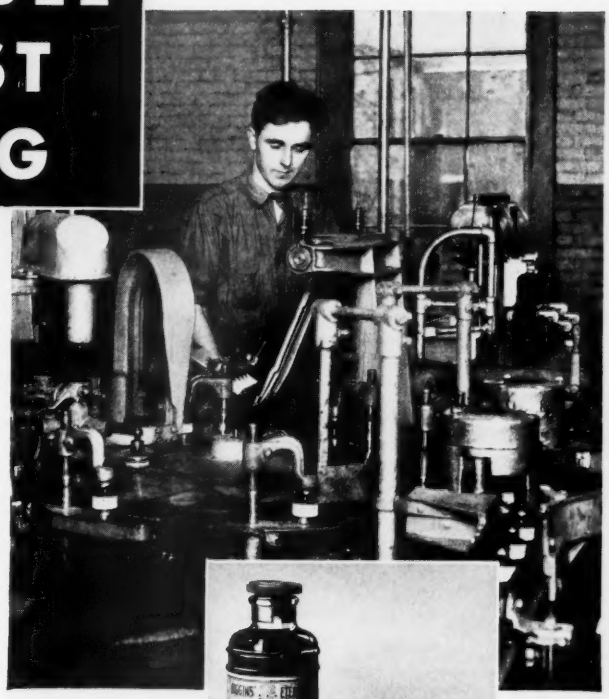

IN a letter recently received from Tracy M. Higgins, president of Chas. M. Higgins & Company, he makes some pertinent remarks about the performance of his O & J Labeler. Here are some excerpts from his letter.

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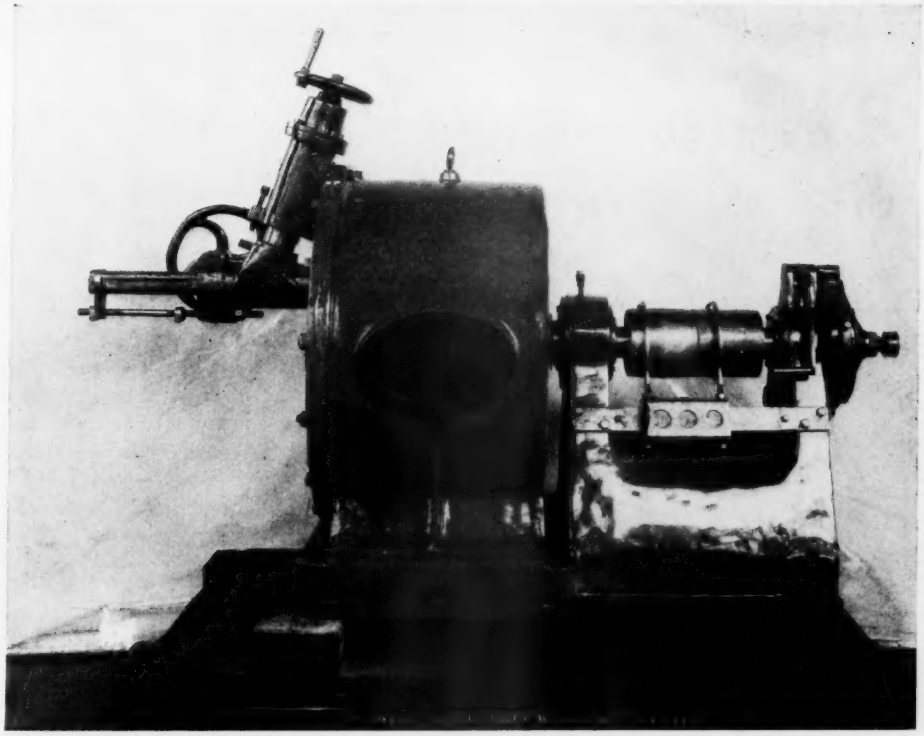

A centrifuge such as Mr. Chilson suggests to replace percolators

Extracting Crude Drugs

By Francis Chilson

EXTRACTION of the soluble constituents of crude drugs is a fundamental problem in the pharmaceutical industry. It is probably safe to say that this basic problem has been less amenable to high speed methods than any other phase of drug manufacturing. The reasons for this are: the high cost of most crudes which makes it necessary to exhaust them entirely; the cost of solvents which makes an additional recovery process necessary; and the skill and experience required to conduct extraction operations. Successful extraction requires that the operator be familiar with the nature of each crude in order to determine how fine to grind it; in order to determine how much preliminary moistening or maceration it should have; he must know how to charge the percolators; he must know from the taste, color, or odor of the menstruum when the extraction is finished; and in certain cases, for the oleoresins, he must be able to perform simple chemical tests to determine when the crude drug has become entirely exhausted. Hence, it is obvious from the foregoing, that drug extraction is still largely empirical in nature. Different manufacturers use different processes or variations of the same process on identical crudes.

In general the preparation of concentrated extracts, tinctures and fluid extracts involves the following procedure:

First; the grinding of the crudes which are marketed in the form of woods, roots, seeds, barks, leaves and gums. Sometimes the crudes require a preliminary cleaning operation before grinding such as blowing or washing. Grinding may be carried out in almost every known form of grinding apparatus—and usually is. But since grinding is of primary importance in effective extraction processes it is desirable to discuss the grinding phase somewhat at length. Woods, seeds, roots and some barks as a general rule are tough or ligneous in character—and their soluble elements are contained in cells whose walls are hard, offering great resistance to the penetration of the solvent. In this class for example are aconite, veratrum veride, nux vomica, cinchona, etc. The hard crudes must therefore be reduced to a very fine mesh to destroy the cell walls

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and to expose a very large surface to the action of the menstruum. Leaves, some roots, and most barks, on the other hand, being relatively soft, contain the soluble constituents in cells comparatively easy to penetrate and hence do not require such fine grinding.

The older form of grinding apparatus known as spice or drug mills and characterized by a chopping or shredding action have been largely superseded by chasers, buhrstone mills and many other types of slow motion stone mills. High speed pulverizers or disintegrators, however, are rapidly supplanting all other types of equipment as standard for grinding operations.

Pulverizers are the fastest grinders yet developed. Their capacity is so great for the amount of power and labor consumed as to make grinding costs negligible. They will grind almost everything. They can be used on a much wider range of products than any other type of equipment; they are easy to set up, easy to clean; and different degrees of fineness can be obtained by merely changing the mesh control screens. Hence, pulverizers (or disintegrators, cage mills and hammer mills as they are sometimes called) provide ideal universal grinding apparatus. Since they are made in various sizes the productive requirements of any business can be met without excessive investment. When grinding drugs of an oily or resinous character, which tend to heat up when being ground, pulverizers are better than the slower types of grinding equipment even when water cooled, because they grind at such tremendous speed. If, for example a piece of resinous material is rubbed with a file it will heat up very quickly; but it it is pulverized by striking it with a hammer it will not generate a perceptible amount of heat at all. It appears practical to suggest that all drugs should be finely pulverized even though some of them may not need it, because the grinding is achieved so quickly in pulverizers that costs are not worth mentioning. If a soft crude will release its soluble elements in a coarse state very readily, it will release them still more readily when finely ground.

Heat extraction of course is the quickest way of penetrating the cell walls of the crudes, but, because of its destructive nature its application is limited to very

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few drugs. The older methods of soaking or maceration, decoction etc., have been generally supplanted by percolation; although maceration of very ligneous drugs is still resorted to as a preleiminary to percolation.

As stated previously extraction by percolation requires considerable skill. In the selection of a percolator for example, one must know whether the moistened crudes will swell and how much. For the soft or spongy drugs which swell most—gentian, senega, rhubarb, etc. the tapered or conical percolators must be used. For the finely pulverized crudes which do not swell the cylindrical percolators are more efficient.

Successful percolation depends upon the following factors:

a—Uniform fine grinding.

b—Sufficient preliminary moistening with the menstruum (excepting the cases where it would cause lumping or adhesiveness.)

c—Selection of proper type of percolator.

d—Uniform even packing of the moistended crude in the percolator.

e—Selection of the right menstruum.

f—Control of the rate of flow of the menstruum.

Grinding must be uniform because the menstruum in passing downward through the crudes in the percolator will follow, naturally, the lines of least resistance, penetrating the smaller particles and avoiding the larger ones. This can be illustrated by filling a funnel with a mixture of rock and table salt and pouring water over it. The fine salt will dissolve immediately while the rock salt remains practically untouched. The fineness of grinding bears a definite relation also to the menstruum used and the packing of the percolator. If alchol, ether, or acetone be used as a solvent and the drug finely pulverized the packing or tamping of the percolator can be comparatively tight.

The packing of the percolator is very important. If it is packed tighter on one side than on the other, or tight in some spots and loose in other, the menstruum, following the lines of least resistance will not penetrate the densely packed areas but will follow the loose areas. If the packing is too solid the solvent will not penetrate at all. Since the menstruum becomes more saturated as it nears the outlet at the bottom of the percolator, and therefore less capable of releasing additional soluble porperties, the percolator should be less firmly packed at the bottom than at the top.

Sound practice dictates the following procedure: A filter paper is laid on the diaphragm in the bottom of the percolator. The finely pulverized and moistened drug is packed into the percolator in even layers, loose at the bottom and successively more firm toward the top. When drug mixtures for tinctures or fluid extracts are being packed, the softer and more soluble crudes are placed toward the bottom and the less soluble toward the top. The percolator should be

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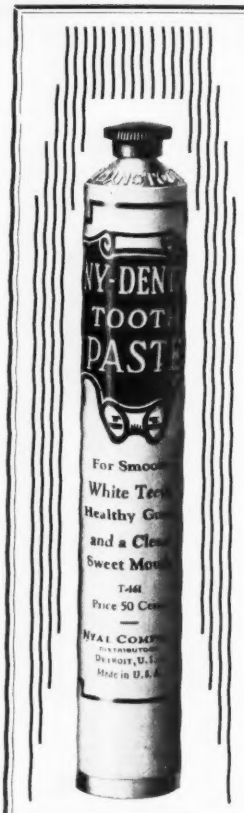

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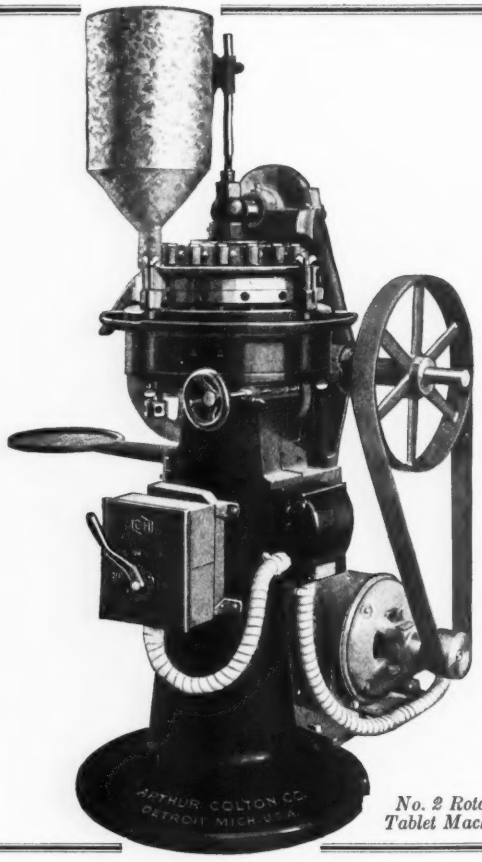

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ARTHUR COLTON COMPANY

2620 East Jefferson Ave.
Detroit, Michigan

packed about two thirds full. The upper diaphragm is put in place and a flannel or woolen mat placed over it to ensure the even distribution of the menstruum when poured over it.

The layout for large scale operation usually requires two floors. On the upper one, closed tanks containing the correct amount of menstruum are placed, connected by means of hose to the percolators suspended from the ceiling of the floor below, and the rate of flow regulated by control valves. Below the suspended percolators are placed the receiving tanks for the percolate. This arrangement makes it easy to dump the exhausted dregs into a truck for removal to the recovery apparatus and also saves pumping and lifting. Other types of percolators are mounted on legs or on benches, and are made of many metals—some being glass lined.

If the percolate is to be concentrated it can be evaporated in a vacuum still, equipped with a condenser to recover the solvent. A combination percolator and concentrator is available for rapid, large scale operation; and this type is particularly useful when the menstruum is explosive. The menstruum is fed into the percolator, which discharges the percolate into jacketed concentrators, from which in turn, the extract is drawn off while the vaporized menstruum passes up through a condenser and is again circulated through the percolator.

It is known that when the menstruum contains a slight percentage of the active properties of the drug it will more readily penetrate the cell tissue of the crudes. Hence a continuous percolator has been designed so that the saturated menstruum may be recirculated. When equipment of this type is used, it is best to draw off the first part of the percolate which is almost always fully saturated. Fractional or repercolation may be carried out in specially designed apparatus. Repercolation means simply that at various stages the saturated menstruum is drawn off while the less saturated remainder is again recirculated. When the solvent is not to be removed from the percolate, as is the case with tinctures and fluid extracts, the exact quantity of menstruum to exhaust the required amount of drug must be known; and for this purpose, continuous or repercolation has a decided advantage.

The ideal menstruum has not yet been discovered. Solvents now in use not only dissolve the active properties of the drugs but other constituents as well—starches, sugars, tannins, gums, etc., which in some cases have to be removed by subsequent fractionation—usually in vacuum apparatus.

The entire process of drug extraction from grinding to evaporation of the percolate and recovery of the solvent is, therefore, quite involved and long drawn out.

It appears that the process could be shortened considerably by the use of separating centrifuges. Extraction could be carried out in almost any type of centrifugal, provided the crude drugs were well soaked with the menstruum beforehand; and it would be so thorough, that the negligible amount of solvent left in the spent dregs would make subsequent recovery unnecessary. The length of time, however, required to macerate or soak the crudes would probably nullify the effects of high speed centrifugal extraction. But since separating centrifuges have been developed in which spearation may be effected with a force approximately 40,000 times that of gravity, it seems possible that they could be applied to drug extractions in a manner which would permit the continuous separation of the active properties of the drug, the menstruum, the starches, gums, mucilages and the like. As material being centrifuged tends to arrange itself in layers of according to specific gravity, it does seem that these layers, representing the various elements in the drug extract, could be separated by means of the separating leaves with which separating centrifuges are equipped.

Similar separation problems are already being handled in centrifuges. As suggesting a line of research it seems that a high speed centrifuge loaded with the moistened crude and fed from the center with the menstruum would throw that menstruum with such terrific force through the mass, that the cell tissue would be penetrated very readily and the soluble constituents thereby released. If centrifuges can be applied in the manner suggested they will cut costs very materially and produce finer products.

New Cream Base

Pfaltz & Bauer, Inc., New York, announce a new product which they name Falba Absorption Base. A product of oxycholesterines, it has the power of absorbing up to five times its own weight of water of aqueous solutions. The mixture is simply accomplished by gradually adding the water or other liquid cold, and mixing intimately with a slow motion agitator. It is important that the liquid be added gradually, to insure perfect absorption.

The resultant mixture is homogeneous, smooth, white and creamy, absorbed by the skin, giving an exceedingly cooling effect. The cream resulting from the mixture of water and falba absorption base will readily blend with perfume oils, making it suitable for cosmetic preparations. It can be mixed also with other cosmetic ingredients. It has been found that materials such as pure lemon juice, honey and other products which have been almost impossible of incorporation in ordinary creams, can very easily be added to a cream and held in suspension, when Falba Absorption Base is one of the ingredients.

This new product is not only readily absorbed by the skin but has distinct skin healing properties. Combined with aqueous medicinal solutions, it should make effective skin unguents and ointments. It will not oxidize or turn rancid, and will prevent oxidation and rancidity of ingredients mixed with it.

The Lactate Corp., 7 Van Brunt st., Brooklyn, New York, has been incorporated under the laws of the State of New York, and is now manufacturing lactic acid according to a process upon which the company holds patents. Various grades of lactic acid are offered at current market prices. B. R. Armour is president.

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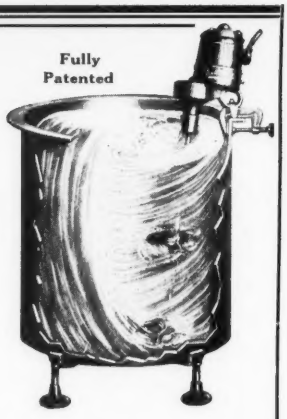

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Drug Stocks Steady

Prices of common stocks of drugs and cosmetics companies showed little change through February, after reaching the year's high in the week ending the 11th, according to the index of the Standard Statistics Company, of New York. More of a change is noted in the prices of common stocks of 337 miscellaneous industrials which reached a new high in the last week of the month. Detailed figures covering both these indexes, are given below:

1926 Average equals 100

		Drugs and cosmetics	*337 Industrials*
Feb.	4	127.2	104.9
	11	129.9	110.9
	18	128.3	110.7
	25	129.2	114.7
Mar.	4	128.4	110.7
1931 High		129.9	114.7
Low		120.6	102.3
1930 High		174.7	174.1
Low		115.8	98.2

Donaldson Heads Gair Co.

At the annual meeting of the Robert Gair Co., New York, E. Victor Donaldson was elected president to succeed George W. Gair, who was re-elected chairman of the board of directors. Mr. Donaldson has been vice-president and general manager and will continue his managerial direction in the new post. The meeting also elected Edwin R. Marshall first vice-president. Mr. Marshall is executive vice-president of the First National Old Colony Corp. The other officers and members of the Board were re-elected.

New Owens Plant

Owens-Illinois Glass Co. have developed plans for construction of a complete automatic bottle factory in the San Francisco Bay district. The first unit of the new plant will be a large fire proof warehouse which will offer immediate facilities for adequately servicing its Pacific Coast customers and which will shortly become a part of the general manufacturing plant.

It is the intention of the company to form a subsidiary corporation under the laws of the state of California to carry on the new operation. All the stock of the company will be owned by the present company and no new financing will be required.

The beauty business ranks among the first ten in the United States, with an estimated annual volume of about $1,000,000,000, according to the Chemical Division of the Bureau of Foreign and Domestic Commerce. There has been an enormous expansion in the use of toiletries, perfumes, cosmetics, lotions, and facial soaps. The industry disposes at present of about 2,000 tons of rouge annually, 4,000 tons of face powder, 6,000 tons of bath salts, and more than 100,000 tons of cold cream, facial creams, and skin lotions. Personal services rendered by beauty shops are estimated to equal $375,000,000 a year.

Manufacturers and utilities of Rochester, N. Y. have adopted a plan of job insurance against depression. The plan, believed to be the first of its kind in any city in the United States, calls for a reserve fund set up by the industries over a period of five years. Among those companies joining hands in the unemployment insurance program are: Eastman Kodak Co., Bausch and Lomb Optical Co., Stromberg-Carlson Telephone Manufacturing Co., Rochester Telephone Corp., Taylor Instrument Co., Consolidated Machine Tool Corp., the Todd Co., the Pfaudler Co., and others totaling fourteen companies.

I. D. A. Stores Increase

A second unit of the Independent Druggists' Alliance of America, numbering 20 stores, opened in Jersey City, March 13. These stores, which will be serviced by the D. Kaltman & Co., Inc., wholesale drug house of Jersey City, are prominent retail establishments in the northern part of the state.

A dozen more stores are being remodeled into I. D. A. retail outlets in Jersey City and vicinity and will soon be opened. With the opening of the Jersey City group, more than 150 independently owned I. D. A. stores will be members of the new alliance in New Jersey.

Monsanto Chemical Works, St. Louis, elected Lynn A. Watt assistant vice president in charge of commercial research and technical service. Mr. Watt has been with Monsanto for eleven years and will continue his work with development and technical problems.

McKesson & Robbins have opened a London office at 21 Mincing Lane.

Drug Industry Stocks

1931 Feb. 28 Bid	1931 Feb. 28 Asked	1931 High	1931 Low	Annual Rate	
		NEW YORK STOCK EXCHANGE			
124⅛	127	129⅜	123⅜	5.00	American Can
149	149½	149½	149½	7.00	pfd.
12	13	14	12		American Com'l Alcohol
58¼	59	60½	47⅞		American Home Products
4	4	4⅜	3⅜	4.20	American Solvents & Chem Co.
10⅛	11	11½	9⅜		pfd.
48	48	49	48	2.50	Colgate-Palmolive-Peet Com.
103⅜	103½	103½	103½	6.00	6% pfd.
7⅛	7⅜	7⅞	7⅛	1.20	Container Corp. Class A
2⅛	2⅜	2⅞	2⅜		Container Corp. Class B
16⅛	18	18	14		Coty, Inc.
71¼	72½	72½	71	4.00	Drug Incorporated
83½	85½	86⅜	82½	8.00	Lambert Co.
32⅜	34⅜	34⅜	31⅞	3.00	Lehn & Fink
15⅛	15⅞	16⅛	14⅝	1.00	McKesson & Robbins Com.
36⅛	37½	37⅞	35½	3.50	pfd.
24¼	24⅝	25⅛	24	1.25	Monsanto Chemical Co.
38	38	38⅝	37⅛	3.00	Owens-Illinois Glass Co.
33	33¾	33¾	30	1.00	People's Drug Store
18	19	19	16⅜		Sharp & Dohme
58	58	58	56⅜	3.50	Sharp & Dohme, pfd.
71	73⅜	77⅞	70	6.00	U. S. Ind. Alc.
					pfd.
1¾	1¾	2	1⅜		Vadsco Sales
		NEW YORK CURB			
125	125	125	110	4.50	Ches. Mfg. Co.
1	3	1	3		David Drug Stores Allot. Ctfs.
3⅛	3⅜	3⅜	1⅜		Helena Rubenstein
12	12	13	12	1.00	Heyden Chemical Corp.
...	...	7⅜	6⅜		International Perfume Com.
...	...	71	67		$6 Cum. pfd.
96	102⅛	102⅞	77	3.50	Mead-Johnson
1	3	1	5		Nauheim Pharmacies Com.
2⅛	2⅜	2⅛	1⅜		pfd.
14⅛	16⅛	42	12⅞		Newport Co. Com.
36	40	40	29	3.00	Northam Warren Corp. Pfd.
28	29	30⅜	28	1.45	Parke, Davis & Co.
5⅜	5⅞	6	4		Stein Cosmetics, Com.
6⅜	7	7	5	40	Vick Financial Corp.
24⅜	26	28⅛	16⅛		Walgreen Co., Com.
11⅛	13¼	13¼	8	1.00	Zonite Products Corp.
		CLEVELAND			
49	49	50⅜	45		Dow Chem. Co.
101½	102½	105⅛	101½		pfd.
22	22	32⅜	22		Miller Wholesale Drug. Com.
14½	15½	15½	14½		Weinberger Drug Com.
		CHICAGO			
38½	46⅞	38½	35		Abbott Laboratories
23	25	25	16⅜		Katz Drug Co., Com.
⅛	¼	6	¼		Lane Drug Co. Com. VTC
⅛	¼	15	⅛		Cum. pfd.
		CINCINNATI			
13	13½	14	9½		Dow Drug Co.
...	...	107	100		pfd.
...	...	...	...		Standard Drug A
		BALTIMORE			
31	32	32½	31		Emerson's Bromo Seltzer
		UNLISTED			
					Heyden Chemical Corp., pfd.
72	75	...	...	8.00	Merck pfd.
...	...	...	...		Noxzema Chem. Co.
...	...	...	...		Squibb Com.
...	...	...	...		pfd.

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Arabol Library Paste . . . packed in Art Tubes . . . buy a tube . . . and see what a perfect team . . . a good product . . . and a reliable tube . . . make.

Peruvian Drug Needs

(*Continued from page 242*)

Small sized containers are preferable as purchasers are limited in means and cannot afford to purchase in large quantities.

Labels, directions and all catalogues, correspondence etc. should be in Spanish, or Spanish translations should accompany the English text. If it is not feasible to put the translation on the actual container, it may be placed in the package. The name of the product need not necessarily be in Spanish. Usually the foreign name is preferable, and the commodity gains an advantage by its use, and is considered superior to local products, or similar articles bearing Spanish names.

Terms of credit vary from 30 to 120 days, generally being longer with the European firms than with us.

With an annual import of medicinal and pharmaceutical goods approximating $400,000 and toilet preparation business valued at about $150,000, the Peruvian trade is not one to be overlooked.

Undoubtedly its growth will continue as the people become more familiar with foreign goods. Many of the Indians, and others living at the mining camps, or engaged in agricultural pursuits in the interior, now depend upon their native doctors to cure their ills. These cures are usually carried on largely by the use of herbal remedies made from the local medicinal plants. Gradually, however, superiority of foreign medicines is coming to the knowledge of the people, and even penetrating into the back country, and year by year, the calls for foreign products are increasing.

This interior trade is difficult to acquire, and cannot be accelerated by advertising, its growth is due to word of mouth recommendation. In the remainder of Peru, however, especially in the coastal cities, advertising in Spanish is of value and its extension will result in increasing calls for our products as people become familiar with them. Any expenditure in advertising will be amply repaid by increasing sales.

Most of our products, in both the medicinal and toiletry lines, are suitable to Peruvian trade, and people already consider the term "Made in America" synonomous with "quality".

Clarence Morgan & Co., Chicago, Feb. 28th, cease to represent in the Illinois territory American Solvents & Chemical Corp., operating in the alcohol field as Rossville Commercial Alcohol Corp., which combination recently took over the former company represented by Clarence Morgan & Co., under a five year exclusive contract agreement namely: General Industrial Alcohol Corp. As yet Morgan has made no plans to replace this representation.

Industrial Chemical Sales Co., Inc., announces the transfer of E. A. Sigworth, chief research chemist of their Tyrone, Pa. plant to the sales division in New York, from which point he will service the company's purification products, including nuchar activated carbons, bleaching clays and diafilt filter-aid.

The Ambiguous Pharmacopoeia

(*Continued from page 228*)

with new knowledge, but still the responsibility under such conditions lies with the revision committee and not with the manufacturers.

The opinion has been expressed that manufacturers can best serve themselves by using what ever influence they have with the revision committee in the direction of entirely eliminating ambiguities and exemptions from the coming revision. Under such conditions the responsibility for supplying the country with those products on which supplies of U. S. P. specifications are short is thrown directly back upon professional pharmacy. They are the ones who are directly responsible and they are the ones who are crying the loudest for a rigid Pharmacopoeia. Give it to them, and then make them adjust it to meet conditions as they exist.

F. J. Stokes Machine Co., Phila., have just issued a new catalog descriptive of their new vacuum fumigating and sterilizing equipment. A vacuum fumigating unit consists essentially of three parts—a steel chamber, a vacuum pump capable for exhausting the chamber, and a heating unit. These units are adapted to fumigation of a wide variety of products including roots and herbs. Fumigating ordinarily requires two to three hours at a cost of ten or twelve cents per hundred pounds.

French Lick Springs Hotel Co., French Lick, Indiana, has appointed Hal Johnson, Director of Sales and Advertising of Pluto Water and French Lick salts. For the past six years Mr. Johnson has been manager of advertising and sales promotion for Wahl-Eversharp Co.

Brucine alkaloid was added to the list of permissible denaturants for vegetable oils, duty free, when inedible, by order of the Bureau of Customs today. The material is to be used in the proportion of one-half ounce to the gallon of olive, palm-kernel, rapeseed, sunflower or sesame oil.

At a meeting of the National Wholesale Druggists' Association held in the Drug and Chemical Club, New York, the week of October 18 was fixed as the date, and the Ambassador Hotel, Atlantic City, N. J., was unanimously chosen as headquarters for the 1931 convention of the Association.

By recent appointment, C. J. Ezell is sales manager of Golden Peacock, Inc. and Mitchum E. Warren, advertising manager of the same company. Both men have assumed active charge of their respective departments in the home office, Paris, Tennessee.

Paris Medicine Co., St. Louis, has appointed Williams & Cunnyngham, Inc., Chicago advertising agency, to direct its advertising account.

Howard H. Hopkins, formerly an assistant account executive with Pedlar & Ryan, Inc., New York advertising agency, has joined the Bristol-Myers Co., New York, as assistant advertising manager.

All plans incident to the merging of The Moxie Co., The Moxie Co. of America and The Pureoxia Co. into one company, now to be known as The Moxie Co., have been completed. Plans for an intensive nation-wide development program are under way. All officers and executives of the new company have been actively associated with the three corporations.

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• • Company Reports • •

Abbott Laboratories on February 19 voted the regular quarterly dividend of 62½c per share. This dividend is payable April first to stockholders of record March eighteenth.

Combined net profits of Abbot Laboratories for 1930, after all charges and federal taxes were $482,064.34. This is equal to $3.32 a share on 145,000 shares outstanding, as compared to $4.91 on 120,000 shares outstanding in 1929. The surplus shows a net increase of $73,453,000 after providing for depreciation, income taxes, dividends and an allowance sufficient to reduce the securities to market value as of December 31, 1930. The current assets are $2,528,680.00 and current liabilities $440,993.00, or a ratio of 5¾ to 1.

American Can Co. report for the year ended Dec. 31, 1930, net income of $22,883,940, after taxes and charges. This is equal to $8.08 a common share after preferred dividends, and compares with $22,724,803 or $8.02 a common share in the previous year. Sales in 1930 were the largest in the company's history, according to H. W. Phelps, president. New construction expenditures during the year were also larger than in 1929, totaling $11,578,953.

American Commercial Alcohol Corp. report for the year ended Dec. 31, net profit of $56,381, compared with $1,395,717 in 1929; charges to surplus by reason of raw material and inventory write-downs to market value and other surplus adjustments, $553,235; current assets as of Dec. 31, $2,696,744; current liabilities, $285,129. For three months ended Dec. 31 an operating loss of $13,804 was reported, against a gain of $427,066 in the corresponding period of 1929.

Container Corp. of America have voted to omit the quarterly dividend ordinarily payable April 1 on the class A common stock, no par value. From January 1, 1930 to and including Jnauary 1, 1931, the company paid quarterly dividends of 30c per share on this issue.

The regular quarterly dividend of $1.75 per share on the preferred stock has been declared, payable April 1 to holders of record March 11.

The preliminary statement for the year ended December 31 shows net profit of slightly in excess of $100,000 after depreciation, interest and Federal taxes, against $774,418 in 1929, or 52c a share on the 588,289 no-par shares of class B common stock then outstanding, after dividends on the 7% preferred and class A common stock.

Heyden Chemical Corp. for the year ended December 31, 1930, shows net income of $302,402 after interest, Federal taxes, etc., equivalent after 7% preferred dividend requirements to $1.87 a share (par $10) on 150,000 shares of common stock. This compares with $483,519, or $3.08 a common share in 1929.

Lehn & Fink Products Co., New York, plans an advertising campaign, using newspapers in Kansas and Missouri, to introduce a new personal antiseptic, known as Formula L-F. The United States Advertising Corp., Toledo, will direct this advertising.

Lane Drug Stores, Inc., reported a net loss of $175,032for the year ended December 31, 1930, compared with a net loss of $305,693 in 1929. The balance sheet as of the same date showed current assets of $517,327 and current liabilities of$478,241, leaving a net working capital of $39,086, which compared with a working capital of $168,583 at the end of 1929.

Mead Johnson & Co. have declared regular quarterly dividend of 75c per share on the common stock and in addition an extra dividend of 50c a share, making a total quarterly payment of $1.25, payable April 1 to holders of record March 15. Like amounts were paid on October 1, 1930 and on January 1, last. An extra dividend of 25c per share was paid in January, April and July 1930.

At the annual meeting, the board of directors was increased to nine members from seven. Three new directors were elected, one of whom succeeds the late E. Mead Johnson, Jr. New directors are: A. L. Rose, vice-president in charge of advertising; Joseph C. Windbel, production manager, and Dr. Chas. E. Bills, director of company's research laboratories. Other directors were reelected. Almbert D. Johnson, formerly treasurer, was elected executive vice-president. Irwin H. Unverzagt, formerly secretary, was elected treasurer, and Harold O. McCutchen, formerly chief accountant, was elected secretary.

Merck Corp. for the year ended December 31, 1930, shows net profit of $271,585 after expenses and taxes, equivalent to $8 a share (par $100) on 33,950 issued shares of 8% preferred stock, on which unpaid cumulative dividends amounted to 34% at the end of the year. This compares with $428,080, or $12.61 a share on preferred stock in 1929. Net profit of Merck & Co., Inc. and subsidiaries, controlled by the Merck Corp. for the year ended December 31, 1930, was $426,206 after depreciation, interest, amortization and Federal taxes, equal to $4.26 a share on 100,000 shares of no-par stock. This compares with $696,782, or $6.97 a share in 1929.

Monsanto Chemical Works, Inc., have declared regular quarterly cash dividend of 31¼c per share on common stock, no par value payable April 1 to holders of record March 10. The usual quarterly dividend of 1½% in stock was omitted. In each of the six preceding quarters a dividend of 31¼c in cash and 1½% in stock was paid.

The Newport Co. and its subsidiary companies report net profit of $863,404 for the year ended December 31, 1930, after depreciation, interest, Federal taxes and other charges. This was equal to $1.47 a share on the common shares outstanding after dividends on the convertible class A shares. This compared with $1,682,285, or $3.50 a common share in 1929. The surplus account showed a surplus of $7,241,518 as of December 31, 1930, compared with $6,848,671 on the same day in 1929.

Parke, Davis & Co., report gross earnings for 1930 of $9,097,291, compared with $9,832,962 for 1929. Earnings per share is equal to $1.58 against $1.76 earned in the previous year.

Parke, Davis & Co. have declared a special dividend of 10c per share and regular quarterly dividend of 25c per share, both payable March 31 to holders of record March 20. Similar dividends were paid six, nine and twelve months ago. On January 2, last, a special distribution of 35c was made.

Sharp & Dohme, Inc., report for the year ended Dec. 31, consolidated net profit after depreciation, Federal taxes and reserves, of $1,225,336, equal, after preferred dividends, to 54c a share on the common stock, compared with $1,683,007 in net profit of predecessor companies, equal to $1.13 a share on the same share basis in 1929.

Zonite Products Corp., announce for the year ended Dec. 31, net income after expenses, taxes and other charges, of $705,608, equal to 83c a share on 845,556 common shares, compared with $1,310,803, or $1.86 a share, on 704,726 shares in the preceding year.

Reversal in Lime Oils

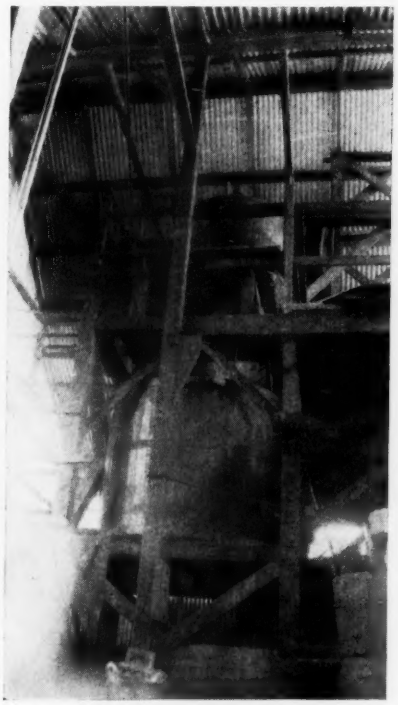
DISTILLED lime oil, once a drug on the market, has apparently assumed the dominant position formerly occupied by the expressed oil and today determines the rise and fall of the lime oil market. Some years ago the expressed oil was the only one which had any major industrial outlet. It was not an uncommon thing for the producer to insist upon the buyer taking a certain amount of the distilled if he wished to purchase some of the expressed. The latter grade was in heavy demand and buyers were so anxious to secure this material that they were perfectly willing to buy some of the distilled too, even though they might not know what they would do with it after they got it.

Gradually, however, the situation changed. Dealers in this country accumulated large stocks of the distilled oil. They decided to put some sales effort on it so as to liquidate some of the stocks. Low prices on the distilled, high prices and occasional shortages of the expressed, helped things along. Many users of the expressed were converted to the distilled and new users almost wholly took to the distilled oil for their raw material. Today the latter is the prime and ruling factor in the market.

This situation is brought home by the increasing strength and higher prices which have been evident in the distilled lime oil market since the first of the year. During the past two weeks prices have advanced from $8.00 to $8.75 per pound. In certain quarters quotations are at $10.00 per pound as this is written. Higher prices seem imminent for supplies in the primary market are reported to be exhausted, while stocks here are not overabundant. The new crop will not be available until September.

Expressed oil, on the other hand, shows no evidence of undue activity. On the contrary, the market seems quiet and far removed from the influences which are causing such interest in the market for distilled oil. In January, 1930, expressed oil was quoted at $19.50 per pound. During the previous year, 1929, it was consistently higher than that. During 1930, prices declined gradually to $16.25 per pound. Quotations in January of this year were at $14.00 per pound, and at the present time quotations are at $12.75 to $13.00 per pound. In September of of last year there was a hurricane in the West Indies which destroyed some of the fruit. Prices on distilled oil jumped from $7.25 per pound to $8.50 per pound. Prices on expressed continued their even tenor at $16.25 per pound to which point they had dropped during the preceding month from $17.75 per pound.

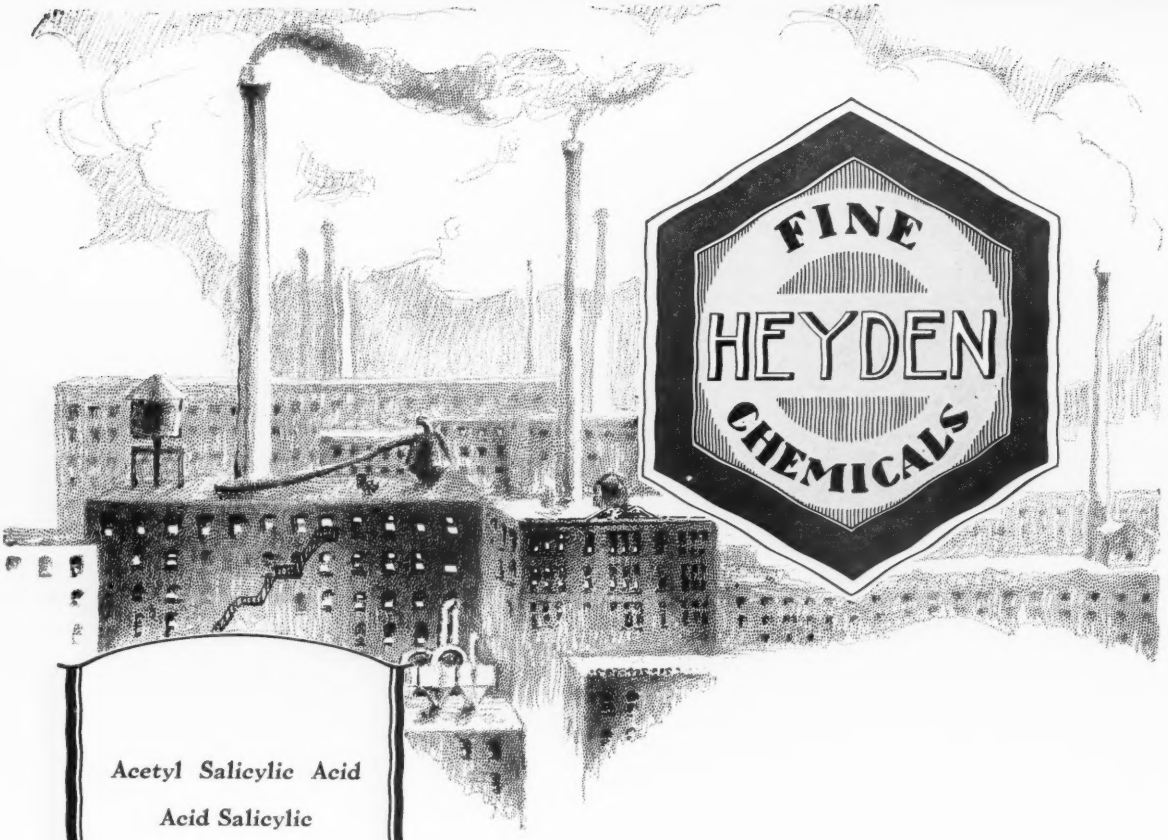
Expressed oil is made by slowly rolling the limes in the pan shown above. The oil runs into the carboy



Lime oil still in Jamaica

The explanation for all this seems to lie in the fact that, while consumption of the expressed oil has fallen off, the distilled grade has been attracting more and more users. In the light of this, it is interesting to speculate upon the possibility of the growers refusing to sell distilled oil unless the buyers take some expressed oil with it. It is also interesting to speculate upon the possibilities of the distilled oil passing the expressed in price. Although theoretically this unusual price situation might be possible temporarily, it could not long continue because of the very nature of the producing operations. But if the situation which exists at present were considerably aggravated, the distilled could go much higher. Demand for expressed, on the other hand, has not been heavy, stocks are ample, and consumers who have their production operating on the basis of distilled oil cannot shift to expressed overnight, so that its price should remain at the present level or possibly continue the downward trend of the past two years.

Although such an eventuality is theoretically possible, it could not be of long duration. Production of expressed oil would simply be curtailed. The distillation process is a much easier and cheaper process than the laborious hand manipulation necessary for the production of expressed. With the new crop in the Fall conditions will take on a more normal aspect again, but in the meantime it will be interesting to watch prices of the two grades and see how nearly they approach each other.



Acetyl Salicylic Acid
Acid Salicylic
Methyl Salicylate
Sodium Salicylate
Minor Salicylates
Benzoate of Soda
Benzoic Acid
Bromides
Benzaldehyde
Benzyl Chloride
Glycerophosphates
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Mexican Vanilla Looks Firm

Interest in vanilla beans at the present time is largely centering around the Mexican beans since these are the only ones that give promise of a firm market. The new crop of Mexican beans, which starts coming through in April and continues until August, is estimated at approximately 165,000 pounds of whole beans, against 140,000 pounds last year. This gain of 18 per cent in the size of the crop would be promising for the consumers of the Mexican beans were it not for the fact a certain demand is always existent for sufficient of the comparatively small Mexican crop to allow holders of the beans to remain quite firm in their ideas as to value.

The firmness of the holders of Mexican beans is generally brought about by the fact that importers in this country secure control of the large majority of the crop, and with the certain demand that will at least consume part of the crop that is out of their hands, their opportunity to realize a profit on the beans in their possession is more than assured. Sometimes the control of the crop that might appear to center with importers in this country is actually completed in Mexico by a Mexican factor. Naturally, this factor will select one of the importers in this country to act as his agent in distributing the beans to the consumer. There are signs that point quite definitely to the fact the coming crop of Mexican beans is moving in this direction, and when the new crop starts to come through the firmness of such a condition might be exhibited.

The amount of cuts that will be available from the new crop is variously estimated at from 65,000 to 90,000 pounds. The wide variance in estimates of cuts is caused by the fact that the growers have not as yet sent through their cuts while they have sent through their whole beans, and therefore it is impossible to accurately determine the amount of cuts that will be available.

The Mexican market therefore appears to face a strong period with absolute lack of distressed selling.

Bourbon beans, on the other hand, continue in a deplorably weak condition with no prospects of strengthening in sight. As we have indicated before, most of the beans in France are reported to be in the hands of the French banks. It is reported by importers here that offers of the French to sell beans have, in some instances, been accompanied by a demand that the importer advance 20 per cent of the value of the beans to be ordered. It is explained that this is not a reflection upon the importers in this country although the ordinary procedure is to open up a letter of credit collectable when the goods are shipped. The fact of the matter is that the French exporters need the 20 per cent in cash before they can ship the goods since they must pay this amount to the bank holding the loan on the goods so that the bank will be willing to release the goods.

Recent information which we received direct from France gives the following interesting information:

Regarding the various plans proposed by planters, it is the general feeling here that financial conditions will have more power than any official decision. It is a fact that a large number of planters have not necessary funds to pick the beans or to cure them. To illustrate the position of a curer, suppose he buys green vanilla beans at the cheapest possible price of one franc per kilo. His cost will be as follows:

4 kilos green vanilla at 1 fr. per kilo for one kilo cured	4.
Curing expenses per kilo cured	7.
Packing	2.
Cost from Madgascar to Marseille	8.
Storage, Insurance, Commissions in Marseille	1.
Total Cost	22

This cost disregards shrinkage and risks of damage. When buying green, the curer will not get more than 25 per cent. prime, and since he might obtain in Marseille 26 to 27 fr. per kilo of sound sweet 25 per cent. prime, his gross profit is 4 to 5 fr. per kilo.

On the whole operation the planter faces ruin at a price of 1 fr. per kilo, and the curer might realize a profit of 20,000 to 30,000 fr. gross profit with six months work and risk of money, considering that the average curing plants in Madagascar are fitted for five or six tons.

Few offers are now being made from the Marseille market at low prices, says the information from France, and there are indications of a concerted action by French dealers. The market in the producing islands has touched a point, as indicated by costs given above, where those concerned with vanilla think it more profitable to let the present crop rot on the stems, and hold their present stocks as the price offered for stocks now on hand are not sufficient to pay expenses of the coming crop.

Banks controlling stocks are watching the situation, but one banker to whom our correspondent was talking stated that he was in no way being advised by New York houses. The banker's position was as follows:

It is quite natural for the bank to sell part of its holdings which it did in selling 60 tons in month. But why should the bank liquidate completely all their holdings, dumping it on their own heads, and knocking the market down against themselves without any hope of recovery? Vanilla costs in paper francs today are less than the cost in gold in 1913. The bankers know that the planters are at the last point of their resistance and that they will have to give up vanilla growing. But if a banker were to dump 180 tons on a market of 30 fr., he would possibly realize a price of only 15 fr. on the whole lot, if he is lucky. The result of the sale would be a yield of 2½ million fr. against a collateral of about 12 million, and the only one who would profit would be the American buyer with fresh funds.

Citrus Oils Still Weak

Citrus oils still continue weak with California lemon at from 65c to 90c per lb. and without much support at these levels. Stocks are excessive when consuming demand is considered. Italian lemon is offered at from 70c to $1.10 per lb. as to quality with the replacement market weak and without support from buyers in the large consuming countries.

Orange oil is also in a weak condition with spot quotations lower. Sweet West Indian is offered at from $2.00 to $2.25 per lb. and Italian at from $2.05 to $2.45 per lb. as to quality. American oil is offered at from $2.30 to $2.40 per lb.

Peppermint continues weak with the spot market making new lows at $1.75 and $1.85 for the natural with the redistilled offered rather freely at from $1.85 to $2.00. The primary market continues to offer stocks that must be disposed of with few takers in the consuming market. Buying has not been important enough to create strength in the market as a whole.

A decline in the primary market for wormseed weakened prices on spot with the article offered here at from $3.25 to $3.50 per lb. There seemed to be a pressing demand at the source for ready cash with the result that this commodity was offered at lower figures. Wormseed is now selling below its level but demand does not seem to warrant a stronger market.

Wormwood is one of the strong items in the present market. Primary market stocks are reported as being very much depleted with higher asking prices there. The spot market, in spite of the fact that demand has been small, has reflected this development with quotations being advanced to the basis of from $7.50 to $7.75 per lb.

A keener competition has developed in bois de rose with spot quotations being reduced 5c per lb. to the basis of from 70c to 75c, for Brazillian, and $1.35 to $1.55 per lb. for Cayenne. The situation here now confirms that prevailing in the primary market for some time.

Spearmint has again been reduced to the basis of from $2.25 to $2.40 per lb. Absence of demand has forced this commodity into new low territory.

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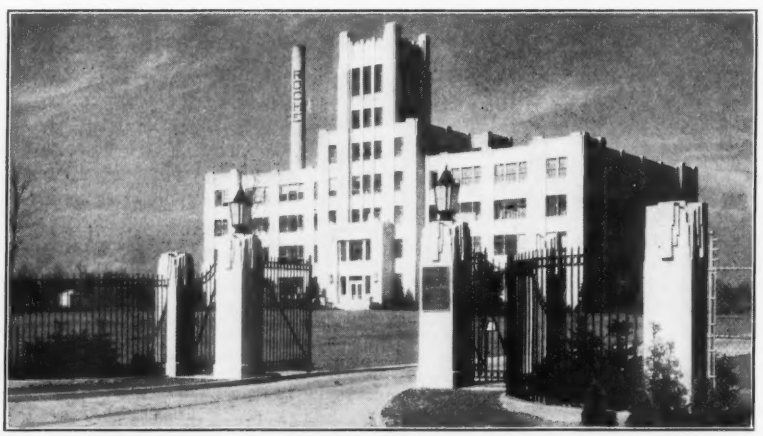

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The Ipecac Position

DURING the past few weeks considerable interest has been shown in the general position of Matto Grosso ipecac on account of the continued fall in price. In early January the market was quite steady, and business was taking place at about $2.94 per lb., no apparent weakness being disclosed at that period, says "Chemist and Druggist," London. Towards the end of January there was an arrival in London of a fair-sized quantity, altogether about 100 bales of Matto Grosso. At the same time quite a number of low-priced offers arrived from Hamburg, with the result that there was a sudden break in values, and fair Matto Grosso root could be purchased at $2.51 per lb. During February the demand, for some unaccountable reason, fell off considerably, and, with the arrival of fresh offers from the Continent, values had a serious setback, with the result that the market has declined to $2.08 per lb. In spite of the recent epidemic, consumers in general have shown little disposition to purchase further supplies, and it would appear fairly obvious that the demand this season has been distinctly disappointing. In certain quarters it has been suggested that ipecac is going out of fashion, and that other drugs are being used in its place, but it is only fair to point out that this is merely a theory put forward in certain directions as an excuse for the lack of demand. Although ipecac, like most drugs, is purchased throughout the year, the principal demand usually takes place at the end of the autumn and winter, when the large consumers are ready to manufacture the emetine preparations. As prices were about 98 cents per lb. higher last September-October, the leading consumers are mostly carrying dear stocks, costing them almost 50 per cent. above the present market parity. We give below some interesting statistics, showing the position of stocks since 1926. The figures represent bales weighing approximately one cwt. each:—

	Jan. 31 1931	*1930*	*1929*	*1928*	*1927*	*1926*
Matto Grosso	210	250	61	202	79	144
Minas		5	10	27	—	—
Cartagena		3	10	16	—	—
East Indian		—	—	3	—	—

A close survey of these figures show that the present stock of 11½ short tons of all kinds is more than ample to supply present needs, although it is not as large as that of last year, when in January the price stood at $3.43 per lb. Regarding future prospects, buyers have generally been faced with the difficulty of forming a definite opinion of the market, on account of the paucity of trustworthy information available from Brazil. It is singularly remarkable that even in pre-war days buyers were always faced with the same obstacle, and very often a large consignment would suddenly arrive on the London market, and the first information received would be the landing of the drug in public warehouse. It is this lack of information which makes it almost impossible to visualize the future trend of the market. The fact that supplies have come forward so freely during the the past few months is mainly attributable to the amount of ipecac that is sold for direct shipment from primary source. These forward sales are principally made to the Continent, and to Germany in particular, as it should be borne in mind that German commercial interests in Brazil still remain very extensive. Briefly, a buyer who may only require a few hundredweight is compelled to purchase a minimum of half-a-ton for direct shipment, and, consequently, a surplus is built up, and London is flooded with cheap Continental offers. In many instances the drug is sacrificed on account of the difficulty of obtaining financial assistance locally. Now that prices have reached a reasonable parity, it is felt that purchases at to-day's low levels would, therefore, appear to be reasonably safe, as the prospect of a further decline in the near future seems remote.

Ipecac Lower Here

Replacement costs for Ipecac root were lower and the spot market weaker to that extent. Carteagna whole root was quoted at $1.70 to $1.75 per lb., with the powdered at from $2.05 to $2.10 per lb. The market has been subject to competition and shading with a call from leading consumers lacking.

Spanish Saffron Off

Spanish saffron has been reduced to $10.75 @ $11.00 per lb. with reports that even slightly lower prices could be obtained by buyers willing to place commitments at this time. The market, which had been very strong several months ago on reports of small crop and unsatisfactory quality, was weakened by the failure of demand to remain up to normal.

The Variance in Quinine Prices

Quinine prices continue to be quoted at unchanged prices from those working under the Dutch monopoly. Some material is reported to be coming into this country from a Dutch manufacturer who is independent of the monopoly. However, prices on quinine sulfate are not cut materially as many reports would lead one to believe. In fact the greatest amount by which the sulfate is shaded from the monopoly price of 40 cents per ounce is one cent per ounce bringing the price on some lots down to 39 cents per ounce.

The wider shading that is reported has been confined solely to the bisulfate. It is stated by some that a cut of four cents per ounce on the bisulfate does not represent any great bargain on quinine. In fact it is said that due to the fact that the bisulfate contains far less actual quinine than the sulfate, the actual prices from every source should price the bisulfate about seven cents per ounce below the price of the sulfate. But since the monopoly price of 40 cents per ounce applies to both the sulfate and the bisulfate, the independent manufacturers cut the price on the bisulfate where there is still an ample profit, and in fact a premium over the price of sulfate. But these same factors do not offer much saving to the buyer of sulfate or to the buyer who is interested primarily in the quinine content of the salt that he buys.

Kava kava root quotations have been shaded to 13c and 14c per lb. which represents 1c per lb. reduction during the past month. It is reported that the market is not steady at the lower levels and, although a buyers market exists, purchases have been in small lots only.

Coriander is reduced to $4.75 per lb. Demand for many weeks has been poor with ample stocks on hand seeking a market.

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Position of Gum Arabic

The extraordinary situation created in Sudan gum Arabic during the past two years, which resulted in such extremely high prices being realized, makes the position of the commodity of special interest to consumers, says "Chemist and Druggist," London. Prior to the year 1929 gum arabic was one of the few Mincing Lane commodities where price fluctuations during the course of the season were few and far between. When it is realized that this gum usually fluctuated 6d. to 1s. per cwt. on the shipment market, and a 2s. rise or fall was regarded with significance, it is somewhat remarkable to record that in the early part of last year it rose by 42s. 6d. per 110 lbs. in the course of barely a fortnight. Dealers both here and in the principal consuming centres abroad are, at any rate, relieved to find that the market has settled down to more normal conditions during the past few weeks. At present the market is fully steady in the neighborhood of 40s. per 110 lbs.c. i. f. for new crop cleaned Kordofan sorts, whilst spot has been realizing between 47s. and 50s. per 110 lbs. Compared with the price of 92s. 6d. per 110 lbs. c. i. f. ruling at the same period last year, it clearly illustrates the remarkable change that has come over the article. We give below some interesting figures, showing the exports of arabic from the Sudan during the months of January to November last year, in comparison with those over the corresponding period of 1929:—

Destination	*1929*	*1930*	*Difference in 1930*	
	Total	*Total*	+	—
Great Britain	2,877	3,625	748	—
U. S. A.	3,746	3,498	—	248
France	2,365	3,127	762	—
Germany	3,089	2,916	—	173
Italy	928	1,347	419	—
Belgium	859	1,150	291	—
Japan	391	681	290	—
Spain	189	341	152	—
Holland	406	523	117	—
Denmark	15	16	1	—
Norway and Sweden	100	332	232	—
Egypt	58	128	70	—
Australia and New Zealand	414	507	93	—
China	144	288	144	—
Canada	20	56	36	—
Argentine	46	33	—	13
Brazil	25	35	10	—
Uruguay	7	5	—	2
Finland	27	27	—	—
British India	84	33	—	51
Other countries in America	24	32	8	—
Other countries	37	87	50	—
Total tons	15,851	18,787	3,423	487
			+2,936	

Regarding future prospects, it is rather difficult to visualize the general situation, inasmuch as the demand abroad since the opening of the new crop is quite an unknown factor. As far as the United Kingdom is concerned, we have witnessed a noticeable falling off in the demand this season, which may be attributable to several factors. This falling off is somewhat significant, and cannot wholly be put down to the present world-wide depression, but to a more important factor, viz., the unprecedented extreme values of the past two seasons. We have consistently pointed out that these high prices would undoubtedly lead to substitutes being used by consumers in place of the gum, and during last year many dextrin and other compositions were found equally suitable for certain purposes where the gum was formerly utilized. It is an acknowledged fact in all commodities that abnormally high prices always lead to a restricted consumption and the general use of substitutes. It remains to be seen, now that values are more on a par with general conditions, whether consumers will again come into the market.

Cinchona Production In India

The area under cultivation on India's Government cinchona plantations at the end of the financial year 1929-30, was 2,877 acres. Extensions comprising 130 acres in the Mungpoo plantation, and 56 acres in the Munsong plantation, were carried out, says "Indian and Eastern Druggist".

The continued prevalence of the nursery epidemic at present overshadows all other plantation considerations at Munsong. Further experiments in the disinfection of nursery soils and sites have not pointed to any easy specific for the disease, but it appears that it was premature to say that a plant once attacked was doomed. Subsequent experience seems to indicate that very early planting to permanent situations in the field before the condition becomes epidemic in the nursery may lead to the prevention and cure of the disease and give the solution to a problem that is of immense importance to cinchona in the whole district. The effect of various degrees of nursery shade is being tested and experiments are being made to ascertain whether the time of sowing affects the virulence of the attack. The outstanding facts of the year are that the disease persists and that a good measure of success has been attained in spite of it. Its presence at Mungpoo has also been established, but there it is not epidemic and does not show itself till after the plants have passed the nursery stage.

The quantity of Bengal bark harvested in the year of report was 1,130,402 lbs. against 1,041,827 lbs. in the previous year. It is satisfactory that the results of coppicing have been fairly successful and that the major part of the harvest in Mungpoo plantations was obtained by coppicing three eight-year-old blocks. Altogether 1,109,863 lbs. of dried bark was used in the factory during the year. Of this, 1,060,656 lbs. represents Bengal bark and the rest Java and Burma bark belonging to the Government of India. Bengal bark produced during the year 29,050 lbs. crude quinine sulphate, approximately 13,000 lbs. purified quinine sulphate converted to 4,919 lbs. tablets and 79,297 boxes of treatments, and 726 lbs. other quinine salts. The purified sulphate powder cost in the bark Rs. 4.83, and to extract Rs. 2.71, a total of Rs. 7.55 per lb. Other products were 15,681 lbs. cinchona febrifuge powder and 4,347 lbs. cinchona febrifuge tablets. From the Java and Burma bark 2,090 lbs. of quinine sulphate, and 932 lbs. of cinchona febrifuge powder were extracted for the Government of India. There has been a further increase in stocks and for the reasons explained in last year's resolution, the difficulty of increasing distribution of quinine among the population for whose benefit it is intended, so long as the worldprice does not fall below its present level, still continues. The cinchona plantation and factory are, however, concerned with production, and in that respect the year was very successful.

Wild cherry bark has been in fair sized demand but a lower price range is in effect at 09c and 10c per lb. for the natural thin bark. Values are reported as now being very low although at the new price level no competition or shading is noticed.

Cubeb berries are lower on spot at 38c and 40c per lb. for XX, with the powdered at 40c and 41c per lb. It is also reported that on firm business lower prices can be done so that the market for this commodity is in a weak position. Lack of interest on the part of buyers is primarily responsible.

Raspberries are in small supply with the stocks available in few hands. The spot market is 75c and 80c per lb. and reported as very firm at these levels. No tendency to make concessions to buyers has been noticed.

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Chamomile Economics

WHAT percentage of the chamomiles imported goes into the preparation of hair washes and shampoos ?

What provisions can be made for importing "rejected" shipments of chamomiles for disposal in this market ?

Upon the answer to these questions depends the future market and future prices of chamomile flowers. The high percentage of rejections during the first two months of this year has done more to raise the price than any other single factor, and an outlet for the rejected material would do much to stabilize the market at lower price levels.

The crux of the whole situation, from a theoretical standpoint at least, is the size of the market which comes under the heading of toilet goods, and which includes manufacturers of beauty lines including hair washes, bleaches and shampoos, as well as the beauty parlor and barber supply trade, which uses the product in bulk as well as bottling some under private brand names.

A complete difference of opinion exists among dealers and importers as to the real extent of this market. One large importer did not know that any chamomiles were sold to this trade. He believed that the only market for the 200,000 to 400,000 pounds imported annually was a package market to those who use the product medicinally in the form of a tea in treating colds and fevers. A second large importer thought that practically all chamomiles went to the toilet preparations trade. A third estimated that from one-quarter to one-third of the chamomiles imported went into the manufacture of hair washes and shampoos. One jobber to the beauty parlor trade estimated the consumption of that trade at about 3,000 pounds per year, which seemed to be the only really definite estimate obtainable. This estimate of course does not include that potentially far greater market represented by nationally advertised lines of hair washes and shampoos, either as single commodities or as part of a complete line of toilet preparations.

The lack of knowledge concerning this market by those selling chamomiles, is surpassed, as might well be expected, by those buying chamomiles for this purpose. With them, however, it takes a different turn. They do not know what affects the price of chamomiles. They do not know that they pay from 16c to 18c per pound for material when they might get material suitable for their purpose at 6c to 7c pound if some provision could be made for importing chamomiles for technical or manufacturing use, as differentiated from medicinal purposes. They do not know that chamomiles used for making hair washes, must pass the U. S. P. test of not more than 5 per cent ash and no foreign matter, just as do the chamomiles used for medicinal purposes.

It is understood that a move is at present under way to remedy this condition by coming to some agreement with the Department of Agriculture with respect to the importation of a manufacturing grade of chamomiles. Thus far there have been no releases for "technical" purposes and of course, whatever provisions are made, must be made so that the medicinal user of chamomiles may receive the same complete protection afforded by the Department's regulations as they exist today. But, granting that possibility, it would be of tremendous advantage to the ultimate consumer, whether medicinal or technical, if such provisions could be made, for thus a market would be supplied for material rejected for entry under the present regulations thus reducing prices and stabilizing the market for both grades

The market at present is an advancing one due chiefly to a shortage of spot supplies for which the high percentage of rejections since the first of the year is directly responsible. The figures available are not particularly alarming for they show that for the fiscal year ending July 31, 1930, 262,408 pounds of chamomiles were imported and 40,781 pounds detained. This compares with 372,610 pounds imported and 135,275 detained in the previous year, and 212,768 pounds imported and 41,329 pounds detained in the year ending July 31, 1928. But it is chiefly in the period since July 31, 1930 that the quantities detained have been exceedingly high, it being estimated in one source that over 200 cases have been detained since the first of January.

The demand so far has been a dealer to dealer demand resulting from rejections and consequent inability to meet customer requirements. But already it has resulted in bringing the price up, from 14c to 16c and 18c lb. on spot. Prices abroad have also advanced from 10½c lb. two months ago, to 11c @ 13c pound for shipment at the present time. In the natural course of events prices will advance further and the market become stronger as the shortage communicates itself to the ultimate consumer between now and the receipt of the new crop which is gathered in May or June.

The one thing which will weaken the market and bring lower prices is some provision for importing a grade for technical purposes. In this event there would be an outlet for detained merchandise, any quantities on hand in this country and in Europe would be precipitated upon the market. This would also result in a slackened demand for the present grade, which now supplies both markets, medicinal and technical.

Senna Exports Very Heavy

A fair demand existed for senna but the market during the past month has experienced considerable competition. It is reported that a large buyer would find sellers ready to negotiate. Stocks are ample to take care of any new development in the way of demand.

The exports of senna from the Sudan during the ten months, January-October, 1930, totaled 668 tons, a large increase compared with the corresponding period of 1929 when 390 tons were shipped. Of the 1930 total, 449 tons were exported to the United States, 174 tons were shipped to Great Britain, and 45 tons were forwarded to Egypt. Most of the senna imported by Egypt, however, is transshipped to other countries.

Golden Seal Below Cost

Golden seal root quotations were again lowered, this time to $1.00 and $1.05 per lb., with the powdered at $1.70 and $1.75 per lb. This commodity has been declining for a long time and is now at levels that represent a low for several years. It would seem at this time that the only prospects for higher prices would be the abandonment of cultivation due to the unprofitable basis of prices. There is every liklihood that this will be done as growers cannot make a profit at current prices. There is, therefore, no immediate prospects of a stronger market as a new crop will not come on the market until much later in the year.

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Market Facts From Grasse

¶ Uncertain Future for Flower Grower

¶ Jasmine Yield One-half Normal

¶ Orange Flower Yield Two-thirds Normal

¶ Lavender Situation Stronger

By O. C. Zilisch

Our Grasse Correspondent

ACCORDING to one of the official organs of the agricultural and cooperative organizations in the Grasse region, absolutely no new cultures of perfume-flower plants have been placed this year. In fact, the contrary has happened, and throughout the district, if one is to take the reports of those in close touch with the situation literally, the yields for this season will be appreciably diminished. Another sign in this direction is the fact the sales of fertilizer have been below the normal. It is admitted that the future of the perfume-flower grower is very obscure, as the conditions existing at the present time do not compare with those of other crises in the Grasse region.

The weather throughout the section has been favorable, and the fine conditions prevalent have been upset only by occasional winds, which caused some damage to the fruit trees. Although a certain amount of inclement weather could still make its appearance in the South of France, it is felt that the danger period has been passed. Naturally, nothing definite can be said, as weather conditions throughout almost all of France have been out of ordinary, with snow, accompanied by thunder and lightning, on March 1, in the Seine department. An unusual amount of rain has fallen in many sections, with the exception of the Grasse region, which could stand a fair quantity of moisture at the present time.

Small Crops Anticipated

Work in the fields has progressed along thoroughly normal lines, with the good weather aiding in this seasonal task, and the growers are satisfied on this score.

The same interest, however, in the work is not there, and it is thought that many of the cultures in the Grasse region will demonstrate a series of highly deficient, or at least faulty, yields. Unless, of course, something should occur on the markets to revive the interest of the perfume-flower growers.

Jasmine, which has been the subject of a number of reports during the past months, according to those in intimate touch with the conditions, a yield for 1931 that promises to go below half that of a normal yield for this important culture. This decline is a very important one for the jasmine, one of the most vital perfume-flower plants of the Grasse region for many years. A deficiency in yield below half that of what is regarded as normal is looked forward to even if all of the flowers grown should be gathered. Quite naturally, such a prediction may prove wholly out of tune with the actual facts, once the yield is in, but it is sincerely thought that the trade can count on a decided cutting down in yield, and to the point suggested.

This condition, if borne out by final figures, will, of course, serve to stabilize the market on jasmine products, which have been weighing rather heavily in the balance of general trade depression. True, certain recent movements of jasmine products have been signalled in the Grasse rigion, but just how important these movements are can not be judged at the present writing. If the movements should be of a size to be felt, they, together with an appreciable deficient yield, will bring with them an upward reaction in prices.

Should the present crisis in the essential oil market, following in with the economic depression that has, apparently, hit the whole world, continue until the time of the jasmine gathering this fall, then, of course, the distilling perfumers will not absorb even the entire deficient crop, as compared to a normal one. Or, if they do absorb the yield in its entirety, the growers fear already that such absorption will be made at their cost. In other words, the distilling perfumers will pay such low prices, even going below those for 1930, that they (the growers) will not be able to break even on their expenses. This sense of fear is anything but pleasant for the grower, who can see years of toil going to naught, with little or no chance to recuperate what he has put into his jasmine plantations.

Jasmine Production Long Process

It is interesting to note in this connection that the growing of a productive plantation of jasmine takes time. It can not be effected overnight. Consequently, if a stabilization period should make its appearance, and the stocks that are now dormant, due to the world trade depression situation, were to move into production, the market conditions, insofar as jasmine is concerned, would show an upward movement that could not be remedied within a year, just for the very reason that a jasmine plantation takes time to establish.

At any rate, everyone is watching the jasmine situation very closely this year, and this year's yield should bring with it some highly interesting developments, particularly in view of the trade conditions prevalent throughout most of the world.

Conditions in France continue good, comparatively speaking, although it must be admitted that unemployment is on the increase. Business among the distilling perfumers with the French trade is reported as being very calm, which in France usually means that a certain industry is simply treading water. The French people as a nation do not become over-excited about anything that has to do with economics, but when there appears to be danger ahead France always puts on the brakes, in order to gain the very calm that one should have when business does not seem to be running on all eight cylinders. France is now very afraid of the over-production bogey, and she is doing everything she possibly can to keep from accentuating it in any way.

In view of this, therefore, the very situation that has developed in jasmine throughout the Grasse region will be answered in time by those who have vision. True, some of the growers concerned will suffer greatly, and even the market may feel the effects, but the stabilization will take place in spite of what any individual, or group of individuals, may say or do.

Respecting the May rose, the situation is what may be termed as not too unfavorable, although not brilliant by any means. Rose cultures were not numerous the past season with a production

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below normal, as the trade will remember. Low prices paid did not encourage the establishment of new plantations, with the result that a number of the plantations still in existence have been neglected. A deficient yield, as compared with the normal, is also predicted for the May rose, with some saying that this year's yield will not extend beyond half that of a normal one. Final results may, of course, shade this prediction a bit, although there seems to be a positive sentiment in that direction.

The orange flower received somewhat better treatment last season, with the result that the orange trees show the care that has been given them, and they are in fine shape at the present writing. Damage caused by the adverse weather conditions of several years ago is beginning to disappear, and the yield for this year, barring all bad weather, of course, is placed at 2/3 normal for this year. This figure may be slightly increased or decreased, depending upon the developments during the next few months.

It should be pointed out also that some of the growers, in certain districts of the Grasse region, are a bit disquieted about the fact that the mild autumn brought the orange trees into full vegetation. This has continued with the mild winter, experienced up to now, and under conditions of this character it only takes one little cold spell of unusual vigor to cause considerable damage. Naturally, the hope is held that the temperature will remain satisfactory until the danger point has been passed.

As already reported previously, the Parma violet is losing its place in the Grasse region, and this year's crop will be very small. Prices for the flowers have not, as yet, been fixed.

The flowering of the jonquil is approaching, and everything in connection with this culture appears to be normal.

Mimosa deliveries are being made during the month of March, as the first gatherings of this flower go to the florist trade throughout France. A recent exposition was held at Cannes, Esplanade des Allees, in which the various varieties of mimosa were displayed. There were to be found the following varieites: Baliana, Dalliata, Bon Accueil, Floribonda, Spectabilis, Gaulois, Robaudy, Fortune, Bermond, Jeannette, Basso, Moteana, Guillon, Soleil, Mirabella, Mirandol, Dealbata (used by the distilling perfumers), Nabonnand, Logifolia, Pendula, etc., etc. The country par excellence for the mimosa is that surrounding Cannes: Golfe-Juan and Mandelieu. Much is being done by the local organizations to increase the growing of the mimosa, and for this purpose the Syndicat d'Initiative of Mandelieu, for example, has organized various celebrations to create an interest in this beautiful yellow flower, in demand among the distilling perfumers and the cut flower trade.

The lavender oil situation has been relieved slightly, with the reported movement of certain stocks from the Grasse region. Prices have, therefore, seen a bit of an upward reaction in some quarters, many being willing now to hold onto stocks that they were ready to sell a short time back. In fact, the entire situation

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has brightened somewhat, if one is to take the statements of those in touch with the lavender oil development during the past months. Just what the immediate future will bring no one can say, as conditions throughout the trade are anything but favorable to a prediction of any kind.

One publication in the South of France recently printed an article on lavender oil which pointed out the difficulty in securing a correct analysis of commercial lavender oil. French oil is now recognized by its pale yellow color, and complex composition, which must be analyzed, it is warned in the article, if one wants to be sure of buying a truly good lavender oil. According to the article cited, there is considerable fraud being practised in connection with lavender oil, particularly with respect to added ingredients, things which have been found by chemical engineers of reputation to considerably lower the quality of a lavender oil.

Much is being done at the present time by the authorities concerned to bring the olive back to its place of importance in the Grasse region. During the past few years the olive trees have been allowed to deteriorate somewhat, due, of course, to the market situation on olive oil. An effort is being made, however, to turn certain types of olives into other channels, and encouragement is being given to that type of olive which also permits of pickling or preserving. The so-called Federation des Cooperatives Oleicoles is made up of 70 cooperatives, composed of 25,000 members, who, according to the minutes of their last meeting, produce more than one third of the olive oil manufactured in France. As already reported several months back, the olive crop for this year will be deficient as to quantity and quality. The various oils taken from seeds, or peanuts, have caused the olive oil people no little concern, and the Federation is now asking higher rates against foreign oleaginous seeds coming into France, in order to further protect the French olive oil industry.

More Lemon, Bergamot, Geranium Imports

Despite the curtailed activities during 1930, and despite the fact that all indications were to the contrary, import figures show that far greater amounts of certain essential oils came into this country during 1930 than during 1929. Naturally the values involved were lower, and the large imports are assumed to be accounted for by heavy buying when prices fell below the values of many prior years. It is surprising in the face of the heavy increase in imports of lemon oil and bergamot oil that the foreign markets continued to weaken to the extent that they did.

Lemon oil imports during 1930 were almost double the imports of 1929, being 624,000 pounds, against 345,000 pounds. Geranium imports were more than double, being 189,000 pounds, against 90,000 pounds. Bergamot imports increased to 176,000, against 113,000 pounds; cassia and cinnamon increased to 372,000 pounds, against 354,000 pounds. Several oils, such as orange, sandalwood, lavender, and attar of rose show declines.

The following table records the imports of essential oils for 1929 and 1930. All quantity figures are in thousands of pounds except attar of roses which is given in ounces. All values are in thousands of dollars:

	1929		*1930*	
Oil	*Quantity*	*Value*	*Quantity*	*Value*
Cassia and cinnamon	354	$470	372	$373
Geranium	90	381	189	593
Attar of roses	49	411	18	216
Bergamot	113	481	176	440
Citronella & lemon grass	1,341	622	1,097	542
Lavender & spike lavender	381	906	376	722
Lemon	345	1,096	624	588
Orange	216	854	166	362
Sandalwood	29	140	19	80
All other oils	4,239	2,213	3,064	1,725

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Low Record in Camphor Imports

Imports of camphor, crude and refined, during 1930, were the lowest recorded during the past eight years. Imports of crude camphor were particulary small, being approximately 25 per cent. of those for the preceding year. The details are shown in the following table.

	Crude		*Refined*	
	Pounds	*Value*	*Pounds*	*Value*
1923	3,640,812	$2,319,097	3,240,322	$2,381,838
1924	1,862,518	1,007,195	2,112,065	1,368,313
1925	2,369,413	1,301,032	1,583,902	953,126
1926	2,018,971	1,157,923	1,169,779	762,523
1927	1,689,714	810,314	1,480,851	822,878
1928	4,364,661	1,648,936	1,176,047	593,430
1929	4,203,795	1,579,562	1,431,438	793,406
1930.	1,058,000	419,000	1,032,000	557,000

Japanese camphor is quoted at 54c and 55c per lb. for refined slabs with the powder at 55c and 56c per lb. Tablets are now offered at 67c and 68c per lb. The market has not shown any definite tendency during the past month.

Glycerin Trade Smaller

The market for C. P. glycerin remains unchanged at 12c per lb. with a fair demand reported. Undertones, however, continue easy as the competitive factor is still very much in evidence.

Exports of glycerin from the United Sattes during 1930 aggregated 606,690 pounds, as against 1,373,605 pounds in 1929. Imports, in 1930, of crude glycerin amounted to 10,906,426 pounds, compared with 14,851,901 pounds in 1929. Imports of refined glycerin totaled 3,177,479 pounds during 1930, as contrasted with 5,493,471 pounds during 1929. The domestic output of chemically pure glycerin during 1930 totaled 69,654,223 pounds as compared with 66,790,647 pounds in 1929.

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Cod Liver Oil Strong

THE cod liver oil position has strengthened since last month and advances in quotations for shipment from Norway have totaled $2.00 per barrel. While spot quotations still stand at last month's figure of $27.00 @ $28.00 per barrel, this price is now considered exceptionally firm due to shipment quotations now standing at $26.00 per barrel c.i.f.

As we indicated last month the market for the oil will probably be affected solely by the production since consumption is almost certain to be as great as during the past year, and most likely there will be an increase. The soundness of such a view of consumption during the present year is indicated by the fact that 1930 showed a very substantial increase in consumption, and still more new types of widely advertised cod liver oil products to be introduced this year will further stimulate the interest of the medical profession and the acceptance of the public toward cod liver products.

There will be available during July a new cod liver concentrate tablet. This tablet to be introduced by the manufacturer of one of the present very reputable and widely accepted products, will be three times the potency in vitamins A and D of any tablet now on the market. Also this same manufacturer will shortly introduce a capsule cod liver oil concentrate with 25,000 times the U. S. P. requirements for vitamin A. Another product will be a solution of this concentrate in oil that will be more potent than viosterol. These products will be offered for approval by the American Medical Association so that their acceptance by the medical profession will be assured.

Since consumption is almost certain to increase, and since therefore, production figures are the only guide to market strength, let us look at the available figures regarding the Norwegian catch. The report that came in during the week of March 2 stated that the previous week had shown a catch for the week of 3,300,000 fish against 14,000,000 fish during the same week of the year before. During this same week there had been derived from the fish 1,528 hectolitres of oil, against 6,032 hectolitres during the same week of the year before. Not very encouraging figures for the consumers. But the report of the entire season's catch up to and including the week in question were somewhat better. These figures read: 16,300,000 fish, against 31,800,000 last year; and 7,425 hectolitres of oil, against 13,975 hectolitres last year.

Thus it will be seen that so far the Norwegian production is not very promising. The latest figures indicate a production this year of little more than half last year's production. And as was indicated in our article last month, the Norwegian production last year was far from sufficient to meet the demand and the great deficiency was made up by oil produced in Iceland. Thus from all indications consumers will more than ever be dependent upon Iceland's production of oil upon which no figures are available until after the season is over at which time subtraction of the Norwegian production figures from the Norwegian exports supplies the total of the Iceland production of oil.

From present indications, therefore, the rising market is justified. Many people are bearish as to any sharp rises in the market, but this opinion seems to be based upon a survey of general conditions rather than to any lack of faith in the strong statistical position of cod liver oil itself. The feeling that causes these people to have no faith in predictions of higher prices is based solely on conditions in various parts of this country which they feel will prevent any marked consumption of cod liver oil and its products.

It is interesting to note that Henry O'Malley, Commissioner of Bureau of Fisheries, Department of Commerce, calls attention to the presence of vitamin D in the oils of such domestic fish as sardine, tuna, menhaden, salmon, Alaska and Maine herring. One Pacific Coast company, states Mr. O'Malley, expects to market more than 500,000 gallons of sardine oil in the middle west for animal feeding during the present fishing season. If such a condition develops, a considerable part of the strain on the cod liver oil supply should thereby be removed to the advantage of drug manufacturers who are consuming the oil. At the same time this development will naturally curtail the business of those drug manufacturers who are marketing cod liver oil in the direction of animal feeding as well as in the market for medicinal oil and concentrates.

Alcohol Price Schedule Soon

The alcohol market is quiet with no change from existing schedule of prices. The season for anti-freeze alcohol is now drawing to a close so that with the cessation of activity in this field the market as a whole takes on a period of dullness at this time of year. The demand for the higher formulae and ethyl alcohol has also been slowed up by the general business depression.

Molasses as quoted on the New York Coffee and Sugar Exchange indicates a greatly reduced cost of production for alcohol. It is reported, however, that distillers have not purchased raw material as yet as they are still operating from carry-over stocks purchased at high prices. The majority of distillers have written down their raw material to the basis of the current market which is approximately 4c per lb. so that they can start the new season with a clean slate.

As far as future price prospects are concerned, new schedules are expected to appear within the next ten days or two weeks. It is reported from one reliable source that the new schedule will not be lower than the prices now prevailing. It is problematical, however, whether the distillers can maintain prices at a high level compared to production costs figured on the basis of low prices of molasses. Should this work out as the distillers hope, they will be in a position to recoup their losses of the past year.

Another development of interest is the report that a large synthetic manufacturer, who now has a quota of 7,000,000 gallons per year, has made application to increase this to about 15,000,000 gallons.

Bismuth metal has been advanced to the basis of $1.40 per lb. This is due to the rise in the London market which is in a very strong position. Bismuth subnitrate has advanced 15c per lb. to the basis of $1.50 and $1.55 per lb. in sympathy with the metal market. The other salts, however, remain unchanged

Cream of tartar is in an easy position with the foreign market competitive and favorable to buyers. The market both here and abroad have been slow and quiet with only fair demand in prospect.

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Menthol Strengthens

Menthol, which had been easy to weak for a long time, showed considerable strength during the past month, advancing 25c per lb. to the basis of $4.00 and $4.25 per lb. as to quantity. The Japanese market has been strong for some time prior to the advance here but replacement in many instances is now necessary and are at the higher levels. Stocks here have been reported as materially reduced by the steady demand over the past two months.

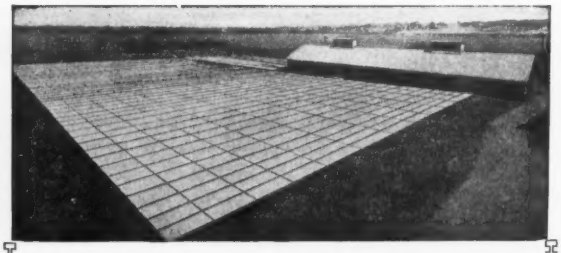
Imports of menthol during 1930 amounted to approximately 308,000 pounds, or 12,000 pounds more than during 1929. However, there was a considerable decrease in the value, the 1930 figures being $1,017,000 against $1,232,000 during 1929.

Lavender Oil Weak

Lavender oil failed to improve in price with an easy, low, and inactive market prevailing. The excessive French production during the last season, and the willingness or necessity of growers to part with their goods at very low figures has created a condition that will require a sustained buying movement to overcome. Buying is but fair, the necessary consuming interest simply not appearing at this time.

It is reported from France that the conditions of the growers there is so drastic that every effort is being made to find some other crop that will do well in this section so that their serious predicament will not be repeated another season. Undoubtedly the production of lavender will be seriously curtailed as it is absolutely necessary for producers to receive higher prices.

United States imports statistics show that during recent years imports of synthetic camphor from Italy were as follows: 132,281 pounds in 1927; 132,303 pounds in 1928; 55,199 pounds in 1929; and 131,000 pounds, (11 months) 1930. (Consul Julian C. Dorr, Cenoa).



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Can Tin be Stabilized?

FOUR countries—the Federated Malay States, the Dutch East Indies, Bolivia, and Nigeria—which are responsible for 88 per cent of the world's tin production, propose to introduce legislation to enforce cutailment of mine output and exports. The new plan, known as the quota scheme, was to have become effective March 1, and will remain in effect for two years by the end of which time the present unwieldy stocks of tin are to be reduced to a level of compatible safety, says A. J. M. Sharpe, London, in the "Wall Street Journal."

When it became evident that the last of the voluntary schemes of the Tin Procucers' Association for correlation of world production and consumption had failed, a more drastic method became absolutely necessary to save the tin mining industry from sheer disaster.

Voluntary regulation of output would have succeeded if the association had received 100 per cent support. Actually, the measure of support accorded its plans for voluntary cutailment last year panned out at 60 per cent.

An international conference was convened in London in December and was attended by representatives of the governments of Holland, Bolivia, Nigeria and the Federated Malay States.

An agreement was reached quickly. The spirit of good will in evidence in settling the ratio of exports under a quota scheme of restriction was in marked contrast with the internecine arguments during previous meetings of the Tin Producers Association when methods for curtailing output voluntarily came up for discussion.

Officials of the Nederlands East Indies must be given full credit for introducing the quota scheme, although Banca tin is the lowest-cost metal produced.

The basic principles of the plan are to limit permissible exports of tin from the four countries to the extent necessary, after allowing for outside production, in order to meet consumption over the next two years and at the same time reduce existing stocks.

The machinery for operating the scheme will comprise a goverr.-ment committee on which the four countries are represented, each having one vote.

Tin mines today are over-equipped; their present producing capacity, 210,000 long tons a year, is well above anything the world has been capable of absorbing in any year. In short, the existing plants have a producing capacity equa l to the most that can be hoped as to world requirements of tin when the next active trade cycle arrives.

At present, many producers are in the dark as to how the allocation of exportable tonnage permitted will be made in each country. Each country will be left to settle for itself the allotment of output among its domestic producers, as it is, of course, purely a domestic question.

In the Dutch East Indies the allotting of the respective tonnages between the government's Banca mines and the private Billiton company is easy. In the other three countries, the best means is for the producers themselves to appoint a committee to fix the individual allowances. There should be some heartburning in Malaya on this point owing to the multitude of Chinese and company producers. Logically, output should be determined on the basis of the existing rated capacity of every producer rather than on production in 1930 or 1929, when some were voluntarily curtailing, and others were not.

The restriction of output by individual producers necessarily will depend on the country in which the mines are located and in no two cases will it be the same. It is in respect to Malaya that this question is evincing the greatest interest. There, producing capacity has been developed to such a degree as to occasion no surprise if individual producers are called upon to operate at no higher than 50 percent of their present capacity during the first year of the new scheme.

Government backing is sought for a scheme that would mean higher costs for tin tubes.

Obviously, everything depends on what world consumption of tin will be over the next 12 months, inasmuch as the quotas of exports will be varied accordingly. Probably changes will be made quarterly.

The government committee must take into account existing stocks of tin. These can be assumed to be 55,000 long tons, allowing for metal in non-reporting warehouses as well as the so-called visible supplies estimated monthly. To reduce these stocks to 25,000 tons by March 1, 1933, means that current output must be kept 30,000 tons below consumption during the next two years.

What are the prospects for consumption of tin in the future ? During 1930, consumption decreased rapidly to no more than 150,000 tons. This can be accepted as actual consumption as distinct from deliveries and shipments which include tonnages privately warehoused. Over the past three or four months, consumption has shown a further serious decrease, so that the international committee will not be justified in accepting a higher basic figure for the first six months of the quota scheme than a consumption rate of 125,000 tons a year. On this reckoning, and to permit stocks being reduced by 15,000 tons by March 1, 1932, involves production being regulated to 110,000 tons over the next 12 months.

Naturally, no one can pretend to forecast precisely what future consumption will be. There are signs now of improvement in the spring and if present hopes fructify, the world actually may consume more tin during the second half of this year than conditions of the moment would make it safe to budget for.

It is of paramount importance to bear in mind that there is no intention of allowing the tin market to take care of itself, or to allow the price to be the shuttlecock of either "bulls" or "bears". It is known to the governments respeonsible for the quota scheme that a powerful financial group intends to work in close collaboration, with the object of gradually raising price of tin to a reasonable level which is placed at £140 to £150 a long ton, or 30c to 33c per pound.

Without such backing, it is quite probable that even under the drastic nature of the new plan the tin market might break through the £100 level, or below 21c per pound. As the all-in cost of the cheap and dear producers alike will be increased by reason of the heavy cutailment they will be called upon to practice, many would be brought to their knees. Even as it is; £150.tin will not compensate the bulk of Malayan producers if the rate of restriction in their case pans out at 50 per cent of their producing capacity.

The scheme will enable the high-cost tin producers to decide upon future policy. It should occasion no surprise if some directorates determine to suspend operations for a year, thereby con-

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serving their financial resources as well as their ore reserves. Such decisions would indeed be welcomed, as the result would be to lessen the hardship on those remaining at work in that they would be allowed to raise their output correspondingly.

Today, there are no "short" accounts open in tin on the London Metal Exchange. Nevertheless, the opinion of some is that on the official announcement that the quota scheme is a *fait accompli*, there will be a sharp advance in price, and that afterwards it will steadily improve until in a few months a level of £140 to £150 is attained.

The international committee must perforce take steps to provide funds for its functioning and to enable an active campaign of reseach to be prosecuted to develop and encourage new uses for tin. Presumably, a small surtax will be levied on mine production, and from this source the international committee will not only be able to meet its own expenses but will finance the Tin Producers' Association, if it entrusts that organization with the duties of supervising research and propaganda as well as the establishment of a proper statistical department.

With regard to the output of tin from countries outside the F. M. S., Dutch East Indies, Bolivia and Nigeria, there is every reason to believe that more will be officially indentified with the quota scheme. Unfederated Malaya and Burma, it is known, will come in, and Siam, the chief of the outside producing countries, also will cooperate. The tin produced in other than these countries is insignificant.

The following table showing in long tons the country of origin of tin production during the past two years is not without interest:

	1929 *Long tons*	*1930* *Long tons*
Federated Malay States	67,040	62,060
Unfederated Malaya	2,330	1,910
Burma	1,770	1,350
Australia	2,200	1,760
Nigeria	10,520	8,700
South Africa	1,500	930
East Arica	250	280
Great Britain	3,260	2,240
Total British Empire	88,870	79,230
Bolivia	43,000	37,050
Dutch East Indies	34,950	34,480
Siam	9,930	11,120
China	6,500	6,200
Spain and Portugal	1,630	1,270
Belgian Congo	1,090	1,050
French Indo-China	580	790
Other countries	2,100	1,400
Total rest of world	99,780	93,360
Total world production	188,650	172,590

It should be noted that production in most cases is calculated on exports. That is why output for 1930 appears high in some instances in view of the curtailment of production practiced. Bolivia is a case in point, as the voluntary restriction in that country introduced in March, 1930, was not reflected in export statistics until June, three months later.

The market for quassia chips is uneventful with the spot market at 6½ c per lb. A note of interest in this commodity is that during 1930 there were ten times more quassia chips exported to the United States from Jamaica (531,000 pounds, valued at $6,000) than during 1929 (53,000 pounds, valued at $1,100). It is reported that the principal exporter is endeavoring to promote the use of quassia as an insecticide.

Less Iodine Imported

Imports of iodine have declined as will be noticed by the following figures. The peak iodine import year was 1927 when receipts amounted to 926,000 pounds. The average for the 18-year period, 1913-1927 was 522,000 pounds a year. Imports for 1930 were the lowest since 1925. The following table shows the quantity imported and value during the past six years:

	1925	*1926*	*1927*	*1928*	*1929*	*1930*
Pounds	246,500	711,000	926,000	721,000	627,000	494,000
Value	$890,000	$2,272,000	$2,901,000	$2,429,000	$2,249,000	$1,798,000

Practically 97 per cent. of the United States imports come from Chile and the remainder from Japan and Great Britain. The crude iodine is resublimed or converted into iodides in this country.

Lower imports of iodine should not, however, be taken as an indication of decreased consumption of iodine products in this country since the production of iodine from oil well brines in California is now progressing at an increasing rate. It is well within the realm of possibility that the recovery of iodine from this source in various parts of the country might make this country completely independent of foreign sources of supply.

Mercury Dips, But Should Recover

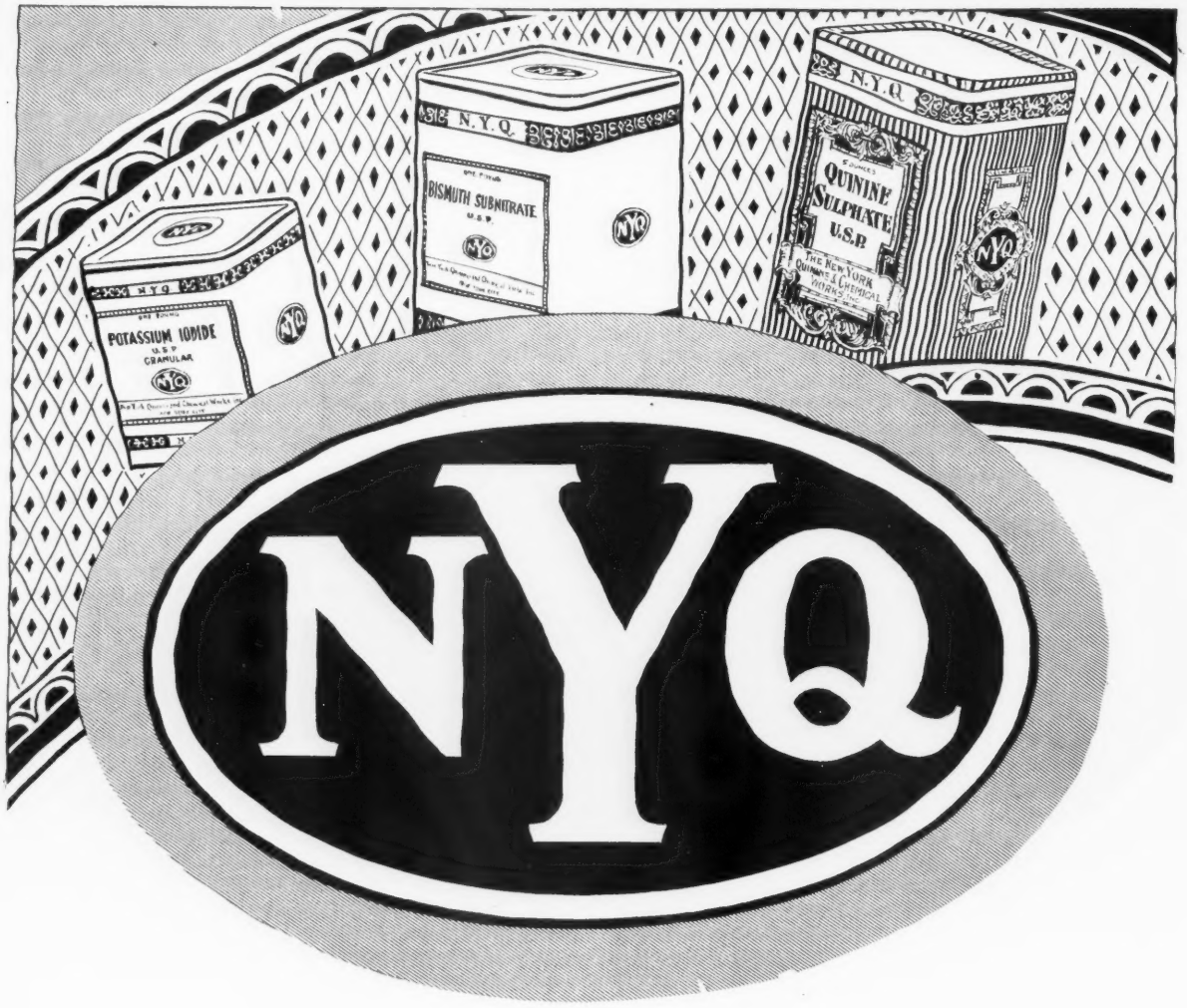
Mercury continues weak with a new low figure being reached at $100 and $102 per flask. This is reported as due principally to distress selling on the part of one dealer with the others stepping in line to meet the competition and that this condition will not last many more days before some improvement will be noticed.

It is also reported that before a decided change can be looked for the large consumers must work off their supplies on hand. This should take another three months, at which time improved buying would result in a more satisfactory market for both producers and dealers. This, of course, would also depend upon another factor, namely that the foreign situation holds at prevailing levels.

According to T. Borowskaja, writing in the Iswestija (and quoted in Die Chemische Industrie, of December 13th), an expedition was sent out last summer to investigate mercury deposits in Central Asia. This expedition reports the existence of considerable mercury resources in South Fergana. A series of mercury deposits is stated to occur for a distance of 200 kilometres along the northern spur of the Altai Mountains. Some of the deposits are found in the valleys at the foot of the hills and some at higher levels, even up to a height of 3000 metres. It appears that these deposits were known to, and worked by, the Chinese before the Christian era. The richest deposit located is about 75 kilometres from the town of Fergana. At this place the ore is immediately under the surface, and its average mercury content is over one per cent. It is provisionally estimated that the deposits contain more than 10,000 tons of metal, whilst no special difficulties are anticipated in their exploitation. Another district in which commercially possible mercury deposits have been discovered is in the Turkmenen Republic, near the Persian frontier.

Mercurials Lower

Mercurials have been reduced rather sharply during the past month. This reflects the decline in the raw material market. Mercury metal is now selling at $100 and $102 per flask on spot which is a new low figure for some time and this favorable factor has been passed down the line. Mercury bichloride is now offered at $1.61 per lb. in crystal form with the powdered selling at $1.46; bisulfate is offered at $1.48; blue mass 95c, with the powdered at 96c; blue ointment U. S. P. $1.19 with mild 30% at 86c. Calomel is quoted $1.82, with red precipitate at $2.06 and white powder at $2.01 per lb. respectively.



Acetanilid	Cinchonidine	Quinidine
Bismuth Subnitrate	Morphine Sulphate	Thymol
Bismuth Subcarbonate	Ethyl Morphine	Salicylates
Cinchonine	Iodoform	Strychnine
Cinchona Alkaloids	Glycerophosphates	Bromide of Soda
Cinchophen	Opium	Bromide of Potash
Codeine Sulphate	Potassium Iodide	Bromide of Ammonia
Codeine Phosphate	Quinine Sulphate	Silver Salts

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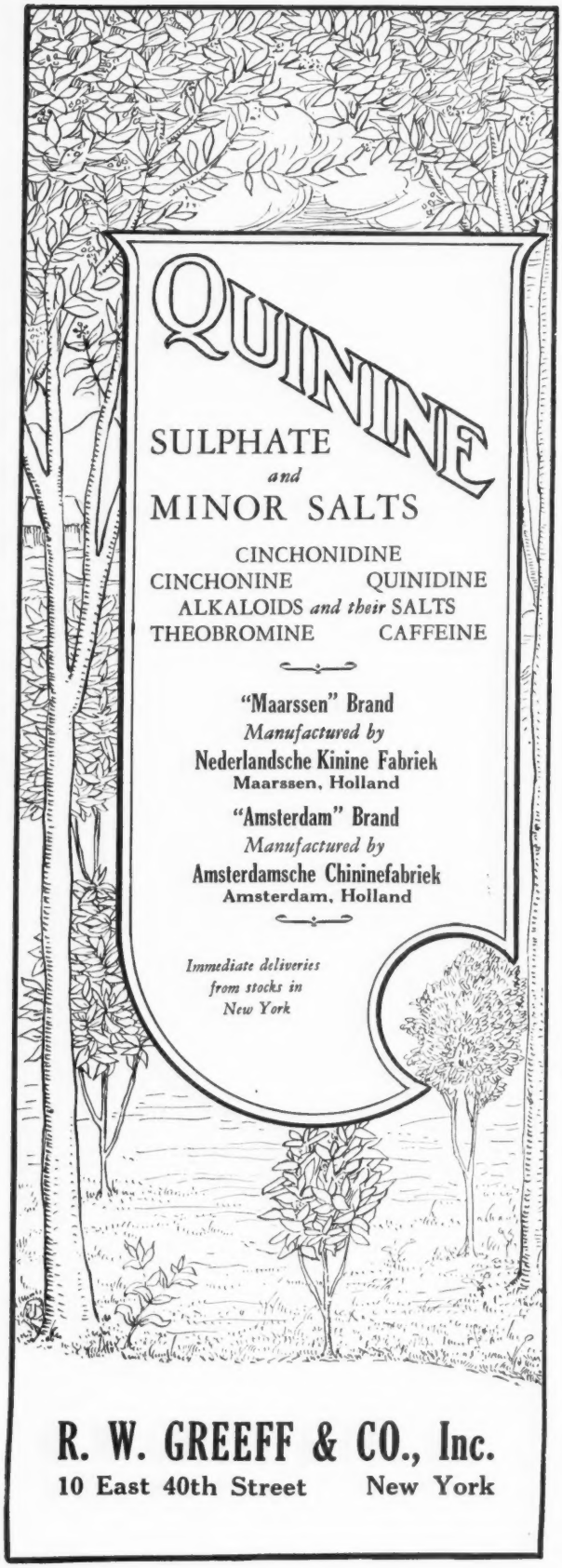
The range of price given is not "bid and asked," but are prices of different sellers, based on varying grades and/or quantities. Containers named are original packages most commonly sold.

Acetanilid
Hyoscyamine Sulfate

Chemicals

Acetanilid, USP, 200 lb bbls.	lb	.24 .25
Acetone, pure 350 lb drs wks.	lb	.12 .14
Acetphenetidin, 225 lb bbls.	lb	1.25 1.30
ACID, Acetylsalicylic, 225 lb bbls.		.85 .90
Agaric, 1 oz vials	oz	... 3.50
Arsenous, USP, 220 lb bbls	lb	... .18
Benzoic, USP, 100 lb bbls.	lb	.60 .61
Boric, 300 lb bbls.	lb	.09½ .10
Cacodylic, 5 lb. bot	lb	... 8.00
Camphoric, USP, VIII 1 lb bot	lb	4.82 4.82
Carbolic, USP, crys 112 lb tins	lb	.17 .18
Cinnamic, 5 lb cans	lb	3.25 3.50
Citric, USP, crys 230 lb bbl	lb	... .40
USP, crys imp. 112 lb keg	lb	.41 .43
USP, powd 200 lb bbl	lb	... .41½
Diethylbarbituric, 1 lb bot	lb	4.00 4.50
Gallic, USP, 150 lb bbls.	lb	... .74
Glycerophosphoric, 25% 1 lb bot	lb	1.40 1.75
Hydriodic, USP, 10% 5 lb bot	lb	... .70
Hydrobromic, USP, 40% 155 lb. cbys.	lb	... .55
Hypophosphorous, USP, 30%	lb	
5 gal demis	lb	... .85
Lactic, USP, VIII 100 lb cbys	lb	.53 .59
USP, X 100 lb cbys	lb	.57 .59
Phenylcinchonic	lb	... 3.25
Phosphoric, USP, Syr 70 lb drs.	lb	.14 .15
Pyrogallic, crys 5 lb cans.	lb	1.30 1.40
Resublimed, 5 lb cans	lb	1.60 1.70
Salicylic, USP, 100 lb bbls.	lb	.40 .45
Stearic, double pressed, bags	lb	.12½ .13
Triple pressed, bags,	lb	.14½ .15
Succinic, 100 lb bbls.	lb	... 1.35
Sulfurous, USP, 6% 100 lb cbys.	lb	.05 .06
Tannic, USP, fluffy 50 lb bbls.	lb	.90 .93
Powd 200 lb bbls	lb	.80 .85
Tartaric, USP, 300 lb bbls.	lb	.32 .33
Aconitine, Alk, crys 1 oz vials	oz	... 30.00
Amorphous, 1 oz vials	oz	... 20.00
Adeps Lanae, hyd 350 lb bbls	lb	.14½ .15
Anhydrous, 350 lb bbls.	lb	.15 .16
Agaricin, 1 oz vis incl	oz	... 2.32
ALCOHOL, Benzyl, 5 lb bot	lb	1.25 1.35
Ethyl, USP, 190 pf 50 gal bbls	gal	2.69½ 2.79½
Pure tax free	gal	.61 .69
Grain drums	gal	2.69 2.79
Denatured, drums add 7c for bbls.		
No. 1 spec	gal	.39 .47
1 comp	gal	.39 .47
No. 5 comp	gal	.39 .47
23 a, spec	gal	.43 .55
39 b, spec	gal	.51½ .61½
40 m. spec	gal	.47 .58
Isopropyl refd 98-99% drs	gal	.95 1.25
Phenylethyl, 1 lb bot	lb	4.30 4.50
Aloin, USP, 100 lb cases	lb	1.73 1.78
Aluminum Acetotartrate kegs	lb	... 1.60
Amidipyrine, 10 lb boxes	lb	4.25 4.45
AMMONIUM, Acetate 100 lb kegs	lb	.38 .40
Benzoate, USP, 1 lb bot	lb	... 1.27
Borate, 10 lb bot	lb	... .35
Bromide, USP, 450 lb bbls.	lb	.38 .39
Imported, 112 lb boxes	lb	.39 .41
Carb, USP, lump 100 lb kegs	lb	... .13½
USP, powd 100 lb kegs	lb	... .14½
Citrate, 100 lb kegs	lb	.90 1.30
Ichthyolate, as to brand	lb	4.00 4.50
Iodide, USP, 25 lb jars	lb	... 5.20
Phosphate, dibasic 250 lb bbls	lb	.48 .50
Salicylate, USP, 100 lb kegs	lb	1.15 1.20
Valerate, USP, 25 lb jars.	lb	2.75 2.90
Amylene Hydrate, 1 lb bot.	lb	... 7.10
Antipyrine, USP, 100 lb cans.	lb	2.25 2.60
Apomorphine Hydrochloride, ¼ oz. vials	oz	22.60 22.70
Arecoline Hydrobrom, 1 oz vials	oz	7.75 8.75
Aspidospermine Amorphous.	oz	... 15.00
Atropine Alk, USP, 1 oz. vials	oz	6.50 7.00
Methyl bromide, 1 oz vials.	oz	... 25.00
Sulfate, 5 oz cans	oz	... 2.50
Single ounce	oz	... 3.00
Barium Iodide, 5 lb box	lb	... 5.15
Sulfate, X-ray diagn bbls.	lb	.09½ .10
BAY RUM Porto Rico, 45 gal. bbls.	gal	.75 .80
Domestic syn. 50 gal bbl.	gal	.70 .75
St. Thomas, 50 gal bbls.	gal	.80 .90
Benzonaphthol, 5 lb boxes	lb	2.50 2.60
Benzoyl Cholride, 500 lb dr.	lb	1.00 1.05
Benzyl Benzoate, Medicinal FFC	lb	1.20 1.40
Chloride Redis, 160 lb cby.	lb	.30 .35
Formate, 1 lb bot	lb	3.25 3.50
Succinate, 160 lb cby	lb	... 5.25
BISMUTH, metal 100 lb cases	lb	... 1.40
Ammon. Citrate, USP, 5 lb cans	lb	... 3.25
Betanaphtholate, 5 lb box	lb	... 2.90
Citrate, USP, 5 lb cans	lb	... 2.60
Chloride	lb	... 3.00
Hydroxide	lb	... 2.90
Nitrate, 25 lb jars	lb	... 1.25
Oxide anhydrous	lb	... 3.25
Oxychloride, 25 lb boxes	lb	... 2.95
Salicylate, 25 lb boxes	lb	... 1.65
Subcarbonate, USP, 25 lb boxes	lb	1.70 1.75
Subcarbonate, X-ray diag 1 lb. bot	lb	2.65 2.72
Subgallate, USP, 25 lb boxes	lb	1.75 1.80
Subiodide, 5 lb lots	lb	... 4.10
Subnitrate, USP, 25 lb jar.	lb	1.50 1.55
Subsalicylate, USP, 25 lb boxes	lb	2.55 2.60
Tannate	lb	... 2.30
Borax, crys USP, 400 lb bbls.	lb	... .06
Bromoform, USP, 5 lb bot cases	lb	1.65 1.90
Butylchloral Hydrate bot	lb	4.00 5.00
Cadmium iodide, 10 lb bot	lb	... 4.55
CAFFEINE Alk, USP, 1		
100 lb kegs	lb	2.45 2.50
Citrated, 50 lb cans	lb	2.20 2.45
Hydrobromide, 1 lb bot	lb	4.80 5.00
Hydrochloride, 1 lb bot	lb	6.05 6.55
Sulfate, 1 lb bot	lb	5.40 5.90
Sodium Benzoate, tins	lb	... 3.05
Salicylate, tins	lb	... 2.95
Calcium Bromide, 100 lb cs.	lb	... .60
Carb, USP, 175 lb bbls.	lb	.05 .06
Glycerophos, 250 lb bbls.	lb	... 1.40
Hypophos, USP, 25 lb cans	lb	.55 .60
Iodide, 5 lb bot	lb	... 4.85
Lactate, USP, 500 lb bbls	lb	.45 .50
Lactophosphate Soluble	lb	... 1.20
Powdered tins	lb	... 1.00
Insol, powd tins	lb	... .50
Sulfide, USP, 100 lb drs.	lb	.21½ .24
CAMPHOR, Jap. ref. slabs 100 lb. cases	lb	.54 .55
Refined powd	lb	.55 .56
¼ oz tab, 100 lb cases	lb	.67 .68
Liniment, bbls	gal	2.20 2.30
Monobrom, 100 lb cases	lb	1.85 1.90
Casein edible, 100 lb kegs	lb	.45 .55
Charcoal Animal medicinal jars incl	lb	... .50
Charcoal Wood, powd, 100 lb. bbls	lb	.06 .07
Chloral Hydrate, USP, 25 lb jars	lb	.78 .80
100 lb drums	lb	.73 .75
Cholesterin	oz	5.50 5.85
Chloroform, USP, 50 lb drs.	lb	.25 .27
Chlorophyll, 1 lb. bot	lb	2.12 2.30
Chromium Sulfate Scales, tins	lb	.45 .50
Powdered tins	lb	.50 .55
Chrysarobin, 50 lb tins	lb	3.75 4.10
Cinchonine Alk, 100 oz tins.	oz	... .38
Crystal	oz	.43 .46
Sulfate, 100 oz tins	oz	... .25
Cinchonidin Sulfate, 100 oz tins	oz	.35 .35
Cincophen, U.S.P. bbls	lb	3.25 ...
boxes, drms., kegs	lb	3.35 3.50
Cocaine Alk, USP, 1 oz vial.	oz	... 11.07
Hydrochloride, USP,	oz	... 8.50
CODEINE Alk, 1 oz vials, 10 lots	oz	... 11.87
Hydrobromide	oz	... 8.92
Hydrochloride	oz	... 10.87
Nitrate, oz vl 10 oz lots	oz	... 9.80
Phosp. oz vl, 10 oz lots	oz	... 9.42
Salicylate	oz	... 8.25
Sulfate, oz vl, 10 oz lots	oz	... 9.67
Colchicino Alk, USP, 1 oz vl.	oz	... 20.00
Salicylate, 1 oz vls	oz	... 35.50
Cream Tartar, USP, 300 lb bbls	lb	.24 .24½
Imp. powd. 224 lb bbls.	lb	.24½ .25
Creosote, USP, 42 lb cbys.	lb	.45 .47
Carbonate, 150 lb	lb	1.50 1.60
Cresol, USP, 400 lb drums	lb	... .20
500 lb drums	lb	.14 .17
DIGITALIN Pure, 1 oz vial	oz	15.00 15.50
Dover's Powder, USP, 5 lb tin	lb	2.75 2.80
Duboisine Sulfate, 1 oz vl.	oz	35.00 40.00
Emetine Alk, 15 gr vial	oz	... .85
Hydrochloride, USP, 1 oz vl	oz	25.00 26.00
15 grain vials	oz	2.50 2.70
Epsom Salts, USP, 200 lb bbls	100 lb.	2.25 2.50
Imp. 100 lb bbls	100 lb.	2.30 2.35
Ergotin Bonjean, 1 lb jars.	lb	18.50 19.00
Eserine Alk, 1 oz vials	oz	... 50.00
Salicylate, 1 oz vials	oz	... 40.00
Sulfate, USP, VIII 1 oz vials	oz	... 40.00
ETHER, USP, 55 lb drums	lb	... .12
Anaesthesia, 55 lb drums	lb	.21 .23
Nitrous, 1 lb bot	lb	... .80
Ethyl Chloride, 200 lb bot	lb	.22 .24
Ethyl Iodide, 5 lb bot	lb	... 6.25
Formaldehyde, USP, 100 lb cbys	lc-l wks	.07 .07½
Gall Extract	lb	.20 .21
GLANDULAR SUBSTANCES Duodenal Substance, 1 lb lots		... 5.50
Liver Substance (Hepatic) 1 lb lots		... 4.50
Orchic Substance (Testicular)		... 4.75
Ovarian Substance, whole, 1 lb lots		... 26.00
Ovarian Residue, 1 lb lots		... 20.00
Pituitary Substance, whole 1 lb lots		... 40.00
Pituitary Substance, Anterior Lobe, 1 lb lots		... 27.00
Thyroid, U. S. P., 1 lb lots		... 4.75
Oxgall Powder, 1 lb lots		... 1.35
GLYCERIN, CP, 550 lb drums	lb	... .12
Gold Chloride, bottles	oz	12.00 12.50
Guaiacol, liq. USP. 100 lb cbys	lb	1.65 1.75
Crystals	lb	2.25 2.50
Benzoate, 1 lb bottles	lb	... 13.00
Carbonate, 5 lb boxes	lb	1.70 2.50
Halazone, 5 lb bot	lb	2.75 3.25
Hexamethylenetetramine, USP, 100 lb dr	lb	.46 .47
Homatropine Hydrobrom USP.	oz	... 14.50
5 oz and 1 oz vials	oz	... 13.50
Hydrastine Alk, USP, 1 oz vial	oz	20.50 21.00
Hydrochlide, USP, 1 oz vials	oz	20.50 21.00
Sulfate, 1 oz vial	oz	
Hydrastinine Hydrochloride, USP, 15 gr vials	oz	22.50 23.00
Hydrogen Peroxide, USP, soln 375 lb bbls	lb	... 40.00
Hyoscine Hydrobrom, USP, 1 oz vials	oz	.03½ .04½
5 oz, 1 oz vials	oz	13.07 13.57
Hyoscyamine Alk, crystals, 1 oz vials	oz	... 25.07
Amorphous, 1 oz vial	oz	... 75.07
Hydrobromide, USP, 1 oz vial	oz	... 25.00
Sulfate, 1 oz vial	oz	... 25.07



R. W. GREEFF & CO., Inc.
10 East 40th Street New York

What Viscosity Means!

Naturally, you know,

But what does it mean in connection with **Petrolatum Liquidum U. S. P.**, a **Medicinal White Mineral Oil ?**

Medicinal White Mineral Oils were originally produced only from Russian Crude Oil. As usual with oils made of the same crude, the higher the Viscosity, then the higher will be the Specific Gravity. Therefore, formerly it was sufficient to classify and sell Medicinal White Mineral Oils on the basis of the Specific Gravity; and of two such oils, the one with the highest Specific Gravity was the better, provided both oils were equally pure. This method, however, does not hold good when comparing oils of different origin, as then the Specific Gravity figure, as a valuation of the oil as a lubricant for either internal or external purposes, ceases to apply; at least such comparisons are likely to lead to serious mistakes.

ALBINOL, Genuine Russian White Medicinal Oil (Petrolatum Liquidum U. S. P.) refined from Russian Oil has a Saybolt Viscosity of about 325" at 100°F and a Specific Gravity of about .885. White Medicinal Oils of different origin have, for example, a Specific Gravity of .890 and higher, but a Saybolt Viscosity of only 300" or less at 100°F. It therefore results that if a different base crude oil is used for the manufacture of Petrolatum Liquidum U. S. P., it is incorrect to judge the value of an oil by the Specific Gravity. It is the **Viscosity** which determines the value of a lubricant; therefore the basis **must** be the Viscosity, and the oil with the highest Viscosity is the most valuable.

Schliemann Companies, Inc.
53 Park Place, New York, N. Y.

REFINERY IN HAMBURG, GERMANY

Chemicals

Hypoquinone, 100 lb kegs...lb.	...	1.20
ICHTHYOL, tins.....lb.	4.00	4.25
Iodide Arsenous, 5 lb bot...lb.	...	5.20
Arsenous-Mercuric soln, 5 lb bot.....qll	...	.26
Iodine, crude, 200 lb kegs...lb.	4.35	4.35
Resublimed, 10 lb tars....lb.	4.65	4.70
Tincture demis.....gal.	...	4.85
Iodoform, powd 10 lb bot...lb.	...	6.50
Iron & Ammonium Citrate, USP, 50 lb cans.....lb.	.65	.66
Chloride, USP, lump 400 lb bbls.....lb.	.06	.08
Citrate, USP, VIII 25 lb can .....lb.	.94	1.01
Hypophosphite, 5 lb cans..lb.	1.55	1.65
Iodide, 1 lb bottles.....lb.	...	4.28
Phosphate, USP, 50 lb cans .....lb.	...	.69
& Potas Oxalate, 250 lb bbl .....lb.	...	.45
Pyrophosphate, USP, 50 lb .....lb.	.74	.80
& Sod Oxalate, 24 lb box...lb.	...	.30
Sulfate, USP, crys bbls....lb.	.04	.04¼
Ferrous dried bbls.....lb.	...	.08
Valerate, tins.....lb.	2.75	3.00
Jalap Resin, USP lumps, 5 lb tins.....lb.	...	4.00
Powdered, tins.....lb.	...	4.65
Lead Acetate, USP, 100 lb kegs .....lb.	.16½	.19½
Iodide, USP, VIII 5 lb bot.lb.	3.20	3.40
Lecithin, 5 oz jars.....oz.	1.00	1.30
Licorice Ext Mass, cases....lb.	.19	.20
Compound powder, bbls...lb.	.11	.13
LITHIUM CARBONATE, 250 lb bbls.....lb.	1.35	1.45
Citrate, USP, 100 lb kegs..lb.	...	1.70
Iodide, 5 lb bottles.....lb.	...	5.65
Lobeline Sulfate, ¼ oz vial..oz.	...	8.75
Magnesium Carbonate, USP, 100 lb bbls.....lb.	.08	.09
English, oz blocks.....oz.	.16	.18
Glycerophosphate, 5 lb tins .....lb	3.20	3.25
Hypophosphite 5 lb cans..lb.	1.15	1.20
Salicylate, 100 lb kegs.....lb	...	1.10
Stearate, bbls.....lb.	.23	.25
Manganese Glycerophosphate, 5 lb tins.....lb.	2.90	3.00
Hypophosphite, USP, VIII 5 lb cans.....lb.	1.35	1.40
Iodide, 1 lb bottles.....lb.	6.40	6.65
MENTHOL, USP, 60 lb cases .....lb.	4.00	4.25
Synthetic, cases.....lb.	3.00	3.25
Mercury Metal, 75 lb flasks...fl.	100.00	102.00
Bichloride, crys 25 lb box..lb.	...	1.61
Gran powd, 100 lb kegs..lb.	...	1.46
Bisulfate, 25 lb boxes.....lb.	...	1.48
Blue Mass, 25 lb boxes....lb.	...	.95
Powd, 25 lb boxes.....lb.	...	.96
Blue Ointment, USP, 50%, 25 lb cans.....lb.	...	1.19
Mild 30%, 25 lb cans....lb.	...	.86
33 1/3% mercury.....lb.	...	.94
Calomel, 50 lb boxes.....lb.	...	1.82
English.....lb.	2.75	2.80
Iodide, green, 25 lb jars....lb.	...	4.80
Red, USP, 25 lb jars...lb.	...	4.89
Yellow, USP, VIII, 25 lb jars.....lb.	4.80	4.80
Red precip, USP, 25 lb boxes .....lb.	...	2.06
Powd., USP, 25 lb boxes.lb.	2.17	2.17
White precip, USP, 25 lb boxes.....lb.	...	2.00
Powd., USP, 25 lb boxes.lb.	...	2.01
Salicylate, 25 lb bot.....lb.	...	2.32
With chalk, USP, 25 lb boxes .....lb.	...	.93
Methanol, Pure 1c-1 drs....gal	...	.44
Methyl Salicylate, USP, 50 lb cans.....lb.	.40	.42
Methylene Blue, USP, med 5 lb cans.....lb	2.00	2.05
Milk powd, 150 lb bbls.....lb.	.09	.12
MORPHINE Alk, 5 oz tin...oz.	10.90	10.95
Acetate, 5 oz tins.....oz.	8.75	8.80
Hydrobromide, 5 oz tins, 10 oz lots.....oz.	8.75	8.80
Hydrochloride, 5 oz tins, 10 oz lots.....oz.	8.75	8.80
Ethyl Hydrochloride, 5 oz tins 10 oz lots.....oz.	...	10.85
Sulfate, 5 oz tins, 10 oz lots .....oz.	8.85	9.00
Naphthalene Flake, 175 lb bbls wks.....lb.	.04½	.05
Balls, 250 lb bbls wks.....lb.	.05½	.06
Oxgall, Purified, 5 lb bot....lb.	1.75	2.50
USP, 5 lb bot.....lb.	2.00	2.50
Oxyquinoline Sulfate, tins...lb.	8.50	9.25
Pancreatin, USP, 100 lb.....lb.	...	1.90
Paraffin, refd, 200 lb cs slabs 118 -120 deg MP.....lb.	.08	.09
128-132 deg MP.....lb.	.07½	.07¾
Para-Aldehyde, USP, 100 gal drums.....lb.	.67	.77
Pepsin, USP, 100 lbs. 1:3000.lb.	...	2.25
100 lbs. 1:6000.....lb.	...	4.00
100 lbs. 1:10000.....lb.	...	6.50
Peptone, powd, 5 lb bot.....lb.	...	...
PHENOLPHTHALEIN, USP, 100 lb drums.....lb.	1.00	1.10
5 lb cans 100 lb lots..lb.	1.13	1.20
Pilocarpine Hydrochloride, USP, 1 oz vials 25 oz lots .....oz.	...	3.25
Nitrate, 25 oz lots.....oz.	...	3.25
Single ounce.....oz.	...	3.50
Alkaloid, 15 gr vials.....vl.	...	.75
Piperazine Hydrate, 1 lb bot..lb.	...	15.00
Piperadine, 25 oz bottles.....lb.	...	8.00
Popodhyllin 5 lb bottles.....lb.	4.35	4.50
Potassium Acetate, USP, 100 lb kegs.....lb.	.29	.30
Bicarb, USP, crys 320 lb bbls .....lb.	.09½	.10
Bromide, USP, crys 100 lb cs .....lb.	.34	.35
Citrate, USP, 50 lb bbl....lb.	.49½	.50
Guaiacol Sulfonate.....lb.	1.95	2.25
Potassium Hypophosphite, 10 lb. cans.....lb.	.75	.80
Iodide, USP, 100 lb cases..lb.	3.50	3.55
Lactophosphate, 4 ox bot..lb.	...	.90
Permangan, USP, crys, 100 lb drs wks.....lb.	.15	.15½
Phosphate dibasic pure, kegs .....lb.	...	.49
Salicylate, 25 lb cans.....lb.	...	1.18
Sulfate, USP, VIII, 100 lb kegs.....lb.	.13	.15
Sulfocyanide, CP 15 lb jars lb.	...	.50
Tartrate, CP, tins.....lb.	...	.65
Pyrogallol, USP, see Acid Pyrogallic.....	...	...
Quinidine Alk, 100 oz tins...oz.	.70	.75
Sulfate, 100 oz tins.....oz.	...	.50
QUININE SULFATE, USP, 100 oz tins.....oz.	...	.40
1 oz tins, 100 oz lots....oz.	...	.47
Dutch, 100 oz tins.....oz.	...	.40
Java, 100 oz. tins.....oz.	...	.40
Japanese 100 oz tins.....oz.	...	.40
Acetate.....oz.	...	.74
Arsenate.....oz.	...	.76
Benzoate.....oz.	...	.74
Bisulfate, USP.....oz.	...	.40
Resale.....oz.	...	.39
Citrate.....oz.	...	.51
Dicarbonate, 1 oz tins....oz.	...	2.56
Dihydrobromide.....oz.	...	.54
Dihydrochloride, USP....oz.	...	.54
Ethyl Carbonate, 16 oz tins .....oz.	...	.70
Ferrocyanide.....oz.	...	.74
Formate.....oz.	...	.73
Glycerophosphate.....oz.	...	.72
Hydrobromide, USP.....oz.	...	.50
Hydrochlorosulfate.....oz.	...	.50
Hydrochloride & Urea, USP .....oz.	...	.74
Hypophosphite.....oz.	...	.70
Lactate.....oz.	...	.66
Phenolsulfonate.....oz.	...	.78
Phosphate.....oz.	...	.62
Salicylate, USP.....oz.	...	.52
Tannate, USP.....oz.	...	.41
Tartrate.....oz.	...	.74
Valerate.....oz.	...	.78
& Urea Hydrochloride, USP .....oz.	...	.88
Rennet, N. F. 5 lb 1:25,000...lb.	2.95	3.50
Resorcinol, USP, 25 lb cans..lb.	1.72	1.80
Rochelle Salt, USP, 225 lb bbl .....lb.	.19	.19½
Imp. USP, 300 lb bbls.....lb	...	.23
Rock Sugar, 5 lb boxes.....lb.	...	.15
Saccharin, USP, 10 lb cans...lb.	1.70	1.80
USP, Soluble, 10 lb cans...lb.	1.75	1.85
Salicin, USP.....lb.	...	12.50
SALOL, USP, 100 lb drums..lb.	...	.90
Saltpetre, powd, bbls wks....lb.	.06½	.08¼
Santonin, USP, bulk.....lb.	123.00	133.00
Saponin, refined.....lb.	1.30	1.50
Siedlitz Mixture, 250 lb bb..lb.	...	.17¾
Silver Metal, American.....oz.	...	.42½
Iodide, 16 oz lots.....oz.	...	.69
Nitrate, 100 oz bottles....oz.	.32½	.34½
Nucleinate, bulk.....oz.	...	.37
Proteinate.....oz.	.39	.41
SODIUM BENZOATE, USP, 100 lb bbls.....lb.	.44	.48
Bromide, USP, 100 lb kegs.lb.	.34	.35
Cacodylate, USP, 25 lb bot .....lb.	4.75	5.90
Citrate, USP, X 50 lb kegs.lb.	.41½	.43
USP VIII, 50 lb kegs....lb.	.36½	.38
Glycerophosphate, USP, crys 25 lb cans.....lb.	1.40	1.55
Powder, 25 lb tins.....lb.	1.45	1.60
Soln, USP, 25 lb tins...lb.	1.05	.120
Hypophosphite, USP, 25 lb cans.....lb.	.65	.70
Iodide, USP, 25 lb jars...lb.	4.25	4.30
Phosphate (Mono-Sodium), 100 lb kegs.....lb.	.30	.31
Di-Sodium USP, granular, 275 lb bbls.....lb.	.07½	.08
Pyrophosphate, 100 lb kegs .....lb.	...	.29
Salicylate, 100 lb kegs...lb.	...	.47
Sulfocarbolate, USP, 100 lb kegs.....lb.	...	.25
Sulfocyanate, CP crys, jars included.....lb.	...	.60
Spartein Sulfate, USP, 25 oz bulk.....oz.	.65	.70
Single oz vial.....oz.	.77	.90
STRONTIUM BROMIDE USP, 50 lb kegs.....lb.	.46	.47
Carb, 100 lb kegs wks....lb.	...	.20
Iodide, USP, 25 lb jars....lb.	...	4.00
Lactate, kegs.....lb.	.90	1.10
Nitrate, 600 lb bbls NY...lb.	.08	.08½
Imp. bbls NY.....lb.	.08	.08½
Salicylate, USP, 100 lb keg lb.	...	1.10
Strophanthin, USP, 1 oz vial.oz.	19.00	19.00
Crystals.....lb.	75.00	75.00
Strychnine Alk, USP crys, 100 oz tins.....oz.	...	.61
Powdered.....oz.	...	.51
Acetate.....oz.	...	.65
Arsenate, 25 oz cans.....oz.	...	.65
Glycerophosphite, USP ...oz.	...	.65
Hydrobromide.....oz.	...	.65
Hydrochloride.....oz.	...	.65
Hypophosphite.....oz.	...	.75
Nitrate, USP.....oz.	.55	.72
Phosphate.....oz.	...	.65
Sulfate, USP, powd.....oz.	...	.42
Sugar, refined, 275 lb bbl 100 lb	5.80	5.90
Milk, USP, 200 lb bbls...lb.	.18	.20
Sulfonethylmethane, USP, 10 lb boxes.....lb.	3.85	4.05
Sulonmethane, USP, 10 lb box .....lb.	2.65	3.85
Sulfur flwrs, washed, USP, 125 lb bbl.....lb.	...	.06
Iodide, USP, VIII, 5 lb bot lb.	...	4.55
TARTAR EMETIC, USP, 300 lb bbls.....lb.	.32½	.34½
Terebene, tins.....lb.	...	.85
Terpin Hydrate, USP, 100 lb kegs.....lb.	.39	.41
Theobromine Alk, 5 lb cans..lb.	1.90	2.25
Sod. Salicylate, 1 lb bot...lb.	...	2.10
Sod. Benzoate, 1 oz vials..oz.	...	1.00
Thymol, USP, 25 lb tins.....lb.	2.00	2.25
Iodide kegs.....lb.	6.00	7.00
Veratrine Alkaloid.....oz.	...	2.25
Sulfate, 1 oz vials.....oz.	...	2.25
Witch Hazel Ext., 50 gal bbl .....gal.	.60	.80
Zinc Carb, USP, 100 lb keg..lb.	.28	.31
Chloride, USP, 25 jars ex..lb.	.24	.29
Iodide, 5 lb bottles.....lb.	...	5.22
Oxide, USP, 100 lb bbls...lb.	.13	.14
Stearate, USP, 50 lb bbl..lb.	.22	.24
Sulfate, USP, 100 lb bbl..lb.	.08	.09
Sulfocarbolate, 100 lb kegs..lb.	.23	.26

Miscellaneous

Castor Oil, odorless, bbls.....lb.	...	.13½
Chalk drop, 175 lb. bbls.....lb.	...	.03½
Precip. light, 250 lb. cask..lb.	...	.04½
Heavy 540 lb. casks.....lb.	...	.02½
Bulk.....ton	...	5.00
English light, bags.....lb.	...	.04¾
English light, casks.....lb.	.05½	...
Cocoa Butter, 12 lb. box....lb.	.42	.45
Cod Liver Oil Nor. 30 gal. bbls	27.00	28.00
Newfoundland.....bbl.	...	31.00
Collodion U. S. P. 30 lb. dr...lb.	...	.23
Corn Syrup 42° 50 gal. bbl. .....100 lb.	3.91	4.16
Gelatin, USP, Silver 100 lb. cases.....lb.	.55	.60
Pure Food, 50 lb. bbl.....lb.	.53	.55
Glucose, (grape sugar) dry 70° bags c-l NY.....100 lb.	3.14	3.24
Haarlem Oil, bot 6 gross cases .....gross	...	3.75
Imported, 5 gr. cs.....gross	...	3.50
Mineral Oil White, 50 gal. bbls. 80-85 vis.....gal.	.50	.55
85-90 vis.....gal.	.65	.70
125-130 vis.....gal.	.75	.85
290 vis.....gal.	.90	1.10
Russian 110-115 vis.....gal.	.69	.79
145-155 vis.....gal.	.72	.82
320-330 vis.....gal.	.80	.90
Olive Oil, Edible bbls.....gal.	2.00	2.40
Paraffin Wax, fully refined, slabs 125 @ 127 A.M.P. bags lb.	...	.03
130 @ 132 A.M.P. bags lb.	...	.04¼
135 @ 137 A.M.P. bags lb.	...	.05
Petrolatum, Lily White, USP, 400 lb. bbl.....lb.	.08	.09
Snow White USP, 400 lb. bbls.....lb.	.09¼	.10
Rice Starch, 140 lb bags....lb.	.09	.10
Soap Castile, bars 40 lb. Case .....Cs.	...	12.75
Powd. USP 250 lb. bbls...lb.	.26	.28
Green, USP, 450 lb. bbls...lb.	.07½	.07¾
Neutral, powd. bbls.....lb.	.17	.18
Talc, Italian, 220 lb bags...ton.	60.00	80.00
French, 220 lb bags.....ton.	40.00	45.00

C A L I F O R N I A

OIL OF LEMON OIL OF ORANGE

From **EXCHANGE** *Groves*

Your customers are quick to sense flavoring variation in the Orange Oil used in their products---They know and appreciate naturalness of flavor and they buy where they are confident of standardized superior quality.

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CORONA, CALIFORNIA

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Sp. Gr. @ 15.5°	0.968 to 0.975
Opt. Rotation $_{AD}$	-4° to -16°
Alcohol as Santalol	90% to 95%
Solubility in 70% Al.	1 in 3 to 1 in 6 Vols.

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Aromatics and Essential Oils

Acetophenene, CP, 1 lb bot	lb.	3.50 3.65
Aldehyde, C 8 (Otcyl) 1 lb bot	lb.	50.00
C 7, 1 lb bot	lb.	4.50 5.50
C 9 (Nonyl), 1 lb bot	lb.	40.00
C 10 (Decyl), 1 lb bot	lb.	48.00
C 14, 1 lb bot	lb.	32.00
C 16, 1 lb bot	lb.	24.00
AMYL ACETATE, pure, 25 lb cans	lb.	.43 .50
Butyrate, 1 lb bot	lb.	1.25 1.50
Butyrate, 5 lb bot	lb.	1.00
Cinnamate, 5 lb bot	lb.	9.50 9.75
Formate, 1 lb bot	lb.	1.90
Formate, 5 lb bot	lb.	1.75
Phenyl Acetate, 1 lb bot	lb.	4.50 5.00
Salicylate, 100 lb cbys	lb.	1.25 1.30
Imported	lb.	2.25 2.50
Anethol, 2 lb bot	lb.	1.90 2.15
Anisic Aldehyde, 1 lb bot	lb.	4.00 4.50
Benzaldehyde, USP, 40 lb cbys	lb.	
50 lb cbys	lb.	1.45 1.55
FFC, 40 lb cbys	lb.	1.35 1.45
Benzoic Ether, see Ethyl Benzoate		
Benzophenone, 1 lb bot	lb.	4.50 5.00
Benzyl Acetate, 100 lb cbys	lb.	.90 1.10
Alcohol, 5 lb bot	lb.	1.20 1.30
BENZYL BENZOATE		1.15 1.20
Medicinal, FFC	lb.	1.40
Buytrate, CP, 1 lb bot	lb.	9.25 9.50
Benzyl Cinnamate, 1 lb bot	lb.	7.00 7.25
Formate, 1 lb bot	lb.	3.25 3.35
Propionate, 1 lb bot	lb.	3.60 3.75
Succinate, 1 lb bot	lb.	5.25 5.50
Valerate, 5 lb bot	lb.	3.00 3.25
Borneol, 1 lb bot	lb.	2.50 3.00
Bornyl Acetate, 1 lb bot	lb.	2.25 3.35
Bromstyrol, 25 lb cases	lb.	4.50 4.65
Butyl Anthranilate dom, 1 lb bot	lb.	
Carvol, 5 lb bot	lb.	3.60 4.00
Cinnamic Acid, 5 lb cans	lb.	3.25 3.50
Alcohol liquid, 1 lb bot	lb.	3.00 3.10
Crystallizable	lb.	7.00 8.00
Aldehyde	lb.	2.25 2.50
Imported, 1 lb bot	lb.	7.75 9.00
Citral, 25 lb cans	lb.	2.65 4.00
Citronellal 1 lb bot	lb.	2.00 4.00
Citronelyl Acetate, 1 lb bot	lb.	6.00 6.25
Coumarin, 25 lb cans	lb.	3.50 4.00
DECYL ALCOHOL	lb.	25.00 28.00
Diethyl Phthlate see Chemicals		
Diphenyloxide, 25 lb tins	lb.	1.00 1.15
Diphenyl Methane	lb.	1.75 2.00
Duodecyl Alcohol	lb.	20.00 22.00
Ethyl Acetate, pure, 5 lb bot	lb.	.45 .50
Benzoate, 5 lb bot	lb.	1.50 1.75
Ethyl Butyrate, 5 lb bot	lb.	1.80 2.00
Caproate, 1 lb bot	lb.	3.25 3.50
Cinnamate, 1 lb bot	lb.	4.00 4.50
Formate, 5 lb bot	lb.	1.00 1.25
Methyl Paracresol, 1 lb bot	lb.	3.25 3.50
Phenyl Acetate, 5 lb bot	lb.	3.75 4.00
Valerate, 5 lb bot	lb.	3.75
Salicylate, 5 lb bot	lb.	1.95 2.00
Eucalyptol, USP, 50 lb cans	lb.	.85 .90
Eugenol, USP 25 lb cans	lb.	3.50 4.00
Geraniol, 50 lb cases	lb.	2.50 3.10
Geranyl Acetate, 1 lb bot	lb.	3.00 3.05
Butyrate, 1 lb bot	lb.	13.00 13.50
Formate, 1 lb bot	lb.	12.00 12.50
Glyco Ester	lb.	1.00 1.10
Heliotropin, 100-10 lbs	lb.	1.65 1.75
Imported	lb.	1.95 2.05
Hydroxycitronellal, 1 lb	lb.	5.50 7.50
Indol, CP, 1 oz bot	oz.	2.90 3.00
IONONE, 1 lb bot 100%	lb.	5.00 6.00
Alpha	lb.	4.80 5.00
Beta	lb.	5.70 5.75
Methyl	lb.	5.75 6.00
Iso Borneol	lb.	2.25 2.35
Iso Bornyl Acetate	lb.	3.00 3.20
Iso-Butyl Benzoate, 5 lb bot	lb.	2.75 3.00
Iso-Eugenol, 1 lb bot	lb.	3.75 3.80
Iso-Safrol, 1 lb bot imp	lb.	1.75 1.85
Domestic, 5 lb bot	lb.	3.50 3.75
Linalol from Bois de Rose, 5 lb bot	lb.	3.00 5.00
Lynalyl Acetate, 1 lb bot	lb.	3.50 4.50
Benzoate, 1 lb bot	lb.	13.00 14.00
Formate, 5 lb bot	lb.	10.50 12.00
METHYL ACETOPHENONE	lb.	3.35 3.50
Anthranilate, 1 lb bot	lb.	2.45 2.50
Imported	lb.	2.70 2.75
Anthranilic Acid	lb.	11.75 12.00
Benzoate, 5 lb bot imp	lb.	1.75 1.85
Domestic, 5 lb bot	lb.	1.75 2.00
Cinnamate, 1 lb bot	lb.	3.75 4.25
Heptenone, 1 lb bot	lb	6.50 7.00
Paracresol, 1 lb bot	lb	4.50 8.00
Phenylacetate, 5 lb bot	lb	3.75 4.00
Salicylate, USP, 500 lb dr	lb.	.40
50 lb cases	lb.	.42
Mirbane rect, 1,000 lb drs	lb.	.12 .13
Musk Ambrette 1 lb cans	lb	7.25 7.50
Ketone 1 lb cans	lb	8.00 8.15
Xylene 5 lb cans	lb.	2.25 2.35
Nerolin 1 lb cans	lb.	1.35 1.40
Octyl Alcohol 1 lb bot	lb.	30.00 32.00
Oenanthic Ether lb bot	lb.	1.90 2.00
Oleoresin Aspidum		
USP, bot and tins	lb.	1.25
Capsicum, USP, bot and tins	lb.	3.50 4.25
Cubeb, USP, bot and tins	lb.	3.00 3.25
Ginger bot and tins	lb.	2.85 3.35
Malefern see Aspidum		
Orris, bot & tins	lb.	15.00 18.00
Pepper, black, USP, bot & tin	lb.	9.50
Vanilla, bot & tins	lb.	8.00 8.75
Paracresol Methyl Ether	lb.	6.50 6.75
Paracresyl Acetate	lb.	5.50 5.75
Para Cymene Refd 110 gal dr	gal.	2.25 2.50
PHENYLACETALDEHYDE		
50% 1 lb bot	lb.	4.75 5.00
Imported 50%	lb.	4.75 5.00
100%	lb.	8.00 8.25
Phenylacetic Acid 1 lb bot	lb.	3.50 3.75
Phenyl Diacetate 1 oz bot	oz.	3.00 3.25
1 lb bot	lb.	8.00 10.00
Imported	lb.	7.00 7.75
Phenylethyl Alcohol 1 lb bot	lb.	4.50 4.75
Phenyl Ethyl Acetate	lb.	8.25 8.75
Butyrate 1 lb bot	lb.	15.00 16.00
Formate, 1 lb bot	lb.	19.00 21.00
Propionate, 1 lb bot	lb.	16.00 18.00
Valerate, 1 lb bot	lb.	19.00 20.00
Phenylpropylalcohol, 1 lb bot	lb.	12.00 12.50
Rhodinol, 1 lb bot	lb	6.25 20.00
Saffrol, drums	lb.	.30 .32
60 lb cans	lb.	.32 .34
Skatol, 1 oz bot	lb.	4.50 7.00
Terpinyl Acetate, 25 lb cans	lb.	.90 .95
Imported, 25 lb cans		.85 .90
TERPINEOL, CP, 1000 lb drs	lb.	.27 .29
50 lb cans	lb.	.31 .33
Absolute, 25 lb cans	lb.	.48 .50
Imported, 25 lb cans	lb.	.58 .60
Valerianic Ether see Ethyl Valerate		
Vanillin (Clove Oil), USP	lb.	5.50 5.75
(Guaiacol) USP	lb.	5.00 5.25

Essential Oils

Almond Bitter, USP, 5 lb bot	lb.	2.65 2.75
Bitter, ffPA, 5 lb bot	lb.	2.75 2.85
Sweet, 56 lb cans	lb.	.46 .49
Almond Meal, 25 lb cans	lb.	.20 .21
Amber crude, 25 lb tins	lb.	.15 .17
Rectified, 25 lb tins	lb.	.50 .53
Amber liquid, 400 lb drs	lb.	2.20 2.30
Ambergris, Black, boxes	oz.	14.00 15.00
Gray boxes	oz.	32.00 36.00
Angelica Root, 1 lb bot	lb.	25.00 35.00
Anise Tech, 400 lb drums	lb.	.46 .48
USP, 60 lb cans	lb.	.50 .52
Apricot Kernel, 50 lb cans	lb.	.26 .27
Bay, 25 lb tins N. F. V., 50.55% Phenol	lb.	2.10 2.30
Terpeneless	lb.	5.80 6.00
BERGAMOT, 25 lb coppers	lb.	2.10 2.20
Terpeneless	lb.	8.00 12.00
Artificial, 25 lb cans	lb.	1.50 1.75
Birch, Sweet, Northern, 25 lb tins	lb.	2.25 2.75
Southern, 25 lb tins	lb.	1.95
Birch Tar, rect., 5 lb bot	lb.	.50 .55
Crude, 50 lb tins	lb.	.12 .13
Bois de Rose, tins	lb.	.70 .75
Brazillian	lb.	1.35 1.55
Cayenne, tins	lb.	.25 .27
Cade, 25 lb cans	lb.	.57 .62
Cajuput, native, 50 lb tins	lb.	2.75 3.00
Calamus, 5 lb bot	lb.	.21 .22
Camphor Sassa, 1000 lb drs	lb.	.17 .18
White, 400 lb drs	lb.	.19 .20
Cans, 50 lbs		
CANANGA, Native 25 lb tins	lb.	2.00 2.15
Rectified, 25 lb tins	lb.	2.30 2.40
Caraway, USP	lb.	1.50 1.65
Cardamon, NF, 1 lb bot	lb.	20.00 25.00
Cascarilla, USP, 1 lb bot	lb.	65.00 80.00
Cassia,		
Redist, USP, 50 lb cans	lb.	1.00 1.05
Cedar Leaf, 50 lb tins	lb.	1.05 1.10
Cedar Wood, light, 1000 lb drs	lb.	.37 .39
Celery, 1 lb bot	lb.	7.50
Chaulmoogra, USP 80 lb cases	lb.	1.50
Cinnamon Ceylon, 1 lb bot	lb.	9.50 13.00
Leaf, 5 lb bot	lb.	1.85 1.95
CITRONELLA Ceylon, 1000 lb drs	lb.	.42 .44
50 lb tins	lb.	.44 .46
Java, 400 lb drs	lb.	.52 .54
50 lb tins	lb.	.54 .56
Civet, Abyssin, horns	oz.	2.10 3.00
Cloves, USP, 50 lb cans	lb.	1.65 1.70
6 lb bot	lb.	2.20 2.25
Copaiba	lb.	.50
Coriander, USP, 10 lb bots	lb.	4.75 5.25
Croton USP, 25 lb tins	lb.	5.00 5.50
Cubebs, USP, 5 lb bot	lb.	2.90 3.00
Cumin, 1 lb bot	lb.	7.00 7.50
Dill, 25 lb cans	lb.	3.75 5.25
Erigeron, 20 lb tins	lb.	1.40 1.50
EUCALYPTUS Austl, USP, 56 lb cans, cases	lb.	.40 .41
500 lb drs	lb.	.37 .38
Fennel, USP, 25 lb tins	lb.	.95 1.10
Geranium African, 25 lb tins	lb.	3.60 4.00
Bourbon, 28 lb tins	lb.	3.35 3.60
Turkish, 28 lb tins	lb.	2.65 2.80
Ginger, 1 lb bot	lb.	5.35 5.60
Gingergrass, 28 lb tins	lb.	2.50 2.70
Hemlock, 25 lb tins	lb.	1.05 1.10
Juniper Berries, USP, 25 lb tins	lb.	1.80 1.85
Wood, 50 lb tins	lb.	.50 .60
Labdanum, 5 lb bot	lb.	5.50 6.00
LAVENDER, USP, 28 lb tins	lb	2.10 2.25
Spike Spanish, 50 lb cans	lb.	.70 .80
Lemon Ital, 25 lb cans	lb.	.70 1.10
California 35 lb cbys	lb.	.65 .90
Lemongrass, native, 50 lb cans	lb.	.70 .72
Limes, expressed, 25 lb tins	lb.	14.00 17.00
Distilled, 25 lb tins	lb.	9.25 9.75
Linaloe Mex., 70 lb cases	lb.	1.75
Mace, distilled, 50 lb tins	lb	1.35 1.40
Mandarin, 25 lb cases	lb.	4.50 5.00
Musk Pods Cabardine, tins	lb.	
Musk Tonquin, tins, Pods	oz.	24.00 26.00
Grains Cabardine, tins	oz.	
Tonquin, tins, Grained	oz.	28.00 34.00
MUSTARD, USP, 1 lb bots	lb.	9.50 10.00
Artif, USP, 5 lb bot	lb.	1.60 1.70
Neroli Bigarade, ¼ & ½ & 1 lb bot	lb.	125.00 250.00
Petale, 1 lb bot	lb.	160.00 170.00
Artificial, 1 lb bot	lb.	5.00 15.00
Nutmeg, USP, 50 lb tins	lb.	1.15 1.20
ORANGE BITTER, 25 lb tins	lb	2.35 2.60
Sweet W Ind, 25 lb tins	lb	2.00 2.25
Italian, 25 lb cop	lb	2.05 2.45
Orange American, Cold pressed 25 lb tins	lb.	2.30 2.40
Distilled, 25 lb tins	lb.	1.10 1.15
Spanish, 25 lb tins	lb.	2.50
Oil Orris, concrete	oz.	6.00 6.25
Origanum, 50 lb cans tech	lb.	.25 .27
Parsley, 1 lb bot	lb.	9.00 9.25
Patchouli, 5 lb bot	lb.	5.50 5.75
Pennyroyal, dom, 25 lb tins	lb.	1.90 2.10
Imported, 25 lb tins	lb.	1.05
Pepper Black lb.		8.00
Peppermint, nat. 60 lb cases	lb.	1.75 1.85
Redis, USP, 60 lb cs	lb.	1.85 2.00
Petit Grain S A, 25 lb tins	lb.	1.25 1.35
French, 1 lb bot	lb.	4.50 4.75
Italian, 25 lb tins	lb.	2.20 2.30
Pimento, 25 lb tins	lb.	2.10 2.25
Pineedle Siberian, cans	lb.	.70 .75
Pinus, Sylvestris, 25 lb tins	lb.	1.30 2.00
Pumilio, USP, 25 lb tins	lb.	1.90 1.95
Rose Fr, 8, 16, & 32 oz pkgs	lb.	14.00 17.00
Bulg, 8, 10 & 32 oz pkgs	lb.	14.00 16.00
Rosemary, USP, 27½ lb tins	lb.	.49
1000 lb drums	lb.	.48
Tech, 25½ lb tins	lb.	.40
Rue, 1 lb bot	lb.	3.00 3.10
SANDALWOOD, E Ind, USP, 100 lb case	lb.	8.25 8.50
W Indian (Amayris), 25 lb tins	lb.	2.85 2.95
Australian, Tins		5.65 5.65
Sassafras, USP, 50 lb cans	lb.	1.30 1.32
Artificial, 1000 lb drs, 60 lb cans	lb.	.27 .29
Safrol, cans	lb.	.36 .38
Savin, 50 lb tins	lb.	2.50 2.75
Snakeroot, Canada	lb.	9.00 9.25
SPEARMINT, USP, 50 lb tins	lb	2.25 2.40
Spruce, 50 lb tins	lb	.95 1.00
Tansy, American, 25 lb tins	lb.	3.25 3.50
Tar, 50 gal bbls	lb.	.25 .30
USP, 50 gal bbls	lb.	.75 1.50
Thyme, red, NF, 25 lb tins	lb.	.75 .77
White, NF, 25 lb tins	lb.	.83 .85
Tech, 110 lb drums	lb.	.60 .70
Turpentine, USP, rect cbys	lb.	.27 .30
Vetivert Bourbon, 10 bot	lb.	4.75 5.00
Indian, 1 lb bot	lb.	25.00 38.00
Java, 1 lb bot	lb.	13.50 14.50
Wine, heavy, 1 lb bot	lb.	1.65 1.75
WINTERGREEN Gaultheria, true, 25 lb tin	lb.	8.00 10.00
Southern, 25 lb tins	lb.	3.75 4.00
Synthetic see Methyl salicylate		
Wormwood, dom, 25 lb tins	lb.	7.50 7.75
Wormseed, Balt, 25 lb tins	lb.	3.25 3.50
Ylang Ylang Bourbon, 10 lb tins No. 1	lb.	5.25 5.50
10 lb tins No. 2	lb.	5.20 5.25
Manila, 1 lb bot	lb.	30.00 36.00

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White Pine Compound
Wild Cherry Bark
Orange Peel — Quince Seed
Gentian Root — Ipecac Root
Areca Nuts — Kamala
Buchu Leaves — Myrrh Gum
Belladonna — Nux Vomica
Deertongue — Senega
Ergot — Senna
Fennel Seed — Stramonium
Ginger — Turmeric
Henna — Uva Ursi

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Aconite Root, USP, bags	lb.	.14	.15
Agar Agar, No. 1, bales	lb.	1.26	1.27
Agar Agar No. 2, bales	lb.	1.18	1.20
Almonds Meal	lb.	.19	.20
Aletris Root, bags	lb.	.30	.31
Alkanet Root, bags	lb	.10	.11
ALOES, Cape, 400 lb cases.	lb.	.11	.12
Curacao, 100 lb cases	lb.	.25	.27
Socotrine, Whole, 300 lb cs	lb.	.32	.37
Althea Root, bags	lb.	.20	.22
Cut cases	lb.	.23	.30
Angelica Root, bags	lb.	.17	.18
Angostura Bark, bags	lb	.19	.20
Anise Star case	lb	.10½	.11
Spanish, bags	lb	.09	.09½
ARABIC GUM, White, No. 1, 220 lb bags	lb.	.35	.37
Seconds, 220 lb bags	lb.	.33	.35
Sorts, Amber, 220 lb bags	lb.	.11	.12
Powd, USP, 300 lb bbls	lb.	.18	.21
Areca Nuts, 100 lb bbls	lb.	.07½	.09½
Powd, 100 lb bbls	lb.	.12	.13
Arnica Flowers, bales	lb.	.12	.14
Root, bags	lb.	.42	.43
Arrowroot, St. Vincent, powd bbls	lb.	.08	.09
Asafoetida, 250 lb cases	lb.	.23	.24
Powd, 50 lb boxes	lb.	.35	.36
Balm Gilead Buds, bags	lb.	.30	.35
Balmony Herbs, bales	lb.	.23	.25
BALSAM COPAIBA Para, 80 lb cases	lb.	...	.23
South American, USP, 80 lb cases	lb.	...	.24
Peru, 120 lb cases	lb.	1.50	1.85
Tolu, 90 lb cases	lb.	1.05	1.10
Barberry Bark, of root, bags	lb.	.20	.22
Bayberry Bark, bales	lb.	.10	.11
Wax bbls	lb.	.29	.32
BELLADONNA LEAVES, bale	lb.	.13	.15
Root, bags	lb.	.12½	.13½
Bees Wax, White, cases	lb.	.48	.52
Yellow refined cases	lb.	.34	.40
Benzoin Gum, Siam, boxes	lb.	1.20	1.30
Sumatra, cases	lb.	.35	.36
Berberis Aquafolium Root, bags	lb.	.09	.10
Beth Root, bags	lb.	.12	.13
Black Indian Hemp Root, 100 lb bags	lb.	.14	.15
Blood Root, bags	lb.	.13	.13½
Blueflag Root, bags	lb.	.16	.17
Boldo Leaves, bales	lb.	.15	.17
Boneset Herb, bales	lb.	.10	.11
Borage Flowers, bales	lb.	.15	.16
Broomtop Herb Cut, bales	lb.	.08	.09
Bryonia Root, bags	lb.	.10	.11
BUCHU LEAVES Short, 250 lb. bales	lb.	.23	.25
Long bales	lb.	.75	.80
Buckbean Leaves, bales	lb.	.08	.09
Buckthorn Bark, bags	lb.	.05	.05½
Berries, bags	lb.	.30	.35
Burdock Root, bags	lb.	.10	.11
Seed bags	lb.	.35	...
Burgundy Pitch, 110 stand gross for net	lb.	.08	.09
Imported	lb.	.10	.11
Calabar Beans, bags	lb.	.20	.21
Calamus Root, blchd cases	lb.	.37	.38
Unbleached, bags	lb.	.07	.08½
Calendula Petals, imp bales	lb.	.35	.40
Calisaya Bark, bales	lb.	.19	.20
Powdered, bbls	lb.	.25	.26
Canary Seed, South America, bags	lb.	.07½	.08
Dutch, bags	lb.	.06½	.06½
Candelilla Wax, bags	lb.	.27	.28
Cannella Alba Bark, bales	lb.	.26	.27
Cannabis, U.S.P.	lb	.23	.30
Cantharides, Chinese, cases	lb.	.40	.45
Powdered, boxes	lb.	.65	.68
Russian, cases	lb.	.70	.75
Powdered, boxes	lb.	.75	.77
Caraway Seed, African, bags	lb.	.05	.06
Dutch, 11 lb bags	lb.	.09	.09½
Cardamon bleached, cases	lb.	1.35	1.40
Decorticated, cases	lb.	.80	.84
Cascara Amarga, 150 lb bbls	lb.	Nom	...
So called bales	lb.	.50	.75
CASCARA SAGRADA, 1928 bark	lb.	.17	.18
1929 bark	lb.	.16½	.18
1930 bark	lb.	.13	.14
Cascarilla Bark, quills, bales	lb.	.90	1.00
Siftings, bbls	lb.	.65	...
Cassia Batavia No. 1 bbls	lb.	.08½	.09
Shortstick, bales	lb.	.08	.08½
Batavia No. 3, bales	lb.	.07	.07½
China Select Rolls, cases	lb.	.03¾	.04
Broken, bales	lb.	.05½	.05½
Saigon, thin	lb.	.22	.23
Buds, cases	lb.	.12	.13
Fistula, baskets	lb.	.08	.09
Catnip, Herb, bales	lb.	.20	.21
Celery Seed, bales	lb.	.18	.20
Ceresin Wax, White, bags	lb.	.15	.20
Yellow 200 lb. bags	lb.	.11	.14
Imp. 100 lb. bags	lb.	.25	.38
CHAMOMILE FLOWERS Roman, bales	lb.	.42	.47
Hungarian, cases	lb.	.18	.20
Charcoal Willow, powd, bbls	lb.	06	.06½
Wood, powd, bbls	lb.	.04	.05
Chestnut Bark	lb.	.07	.08
Leaves bales	lb.	.05	.05½
Chicle Gum, lb bbls	lb.	.58	.75
Chiretta, bales	lb.	.16	.19
Cinnamon, Ceylon, No. 1, bales	lb.	.17	.18
No. 2 bales	lb.	.15½	.16
No. 3 bales	lb.	.15	.16
Clover Tops, Red, bags	lb.	.08	.09
Cloves Zanzibar, 135 lb bbl	lb.	.30	.31
Cochineal, Black	lb.	.69	...
Silver	lb.	.85	...
Cohosh Root, Black, bags	lb.	.07	.08
Blue, bags	lb.	.08	.09
Colchicum Root, bags	lb.	.08	.09
Seed, bags	lb.	.75	.80
COLOMBO ROOT, bags	lb.	.07	.08
Colocynth Pulp, bales	lb.	.19	.20
Coltsfoot Leaves, bags	lb.	.08	.09
Comfrey Root, bags	lb.	.12	.13
Condurango Bark, bags	lb.	.10	.11
Coriander Seed, Morocco, bags	lb.	.02½	.03
Bleached, bags	lb.	.05½	.06
Corn Silk, bales	lb.	.06	.07
Cotton Root Bark, bales	lb.	.09	.10
Cowhage, 1 oz tins	lb.	1.00	...
Cramp Bark so called bales	lb.	.06	.06½
True, bags	lb.	.32	.37
Cranesbill Root, bags	lb.	.10	...
CUBEB BERRIES, XX bags	lb.	.38	.40
Powdered, boxes	lb	.40	.41
Culvers Root, bags	lb.	.15	.16
Cumin Seed, Malta, bags	lb.	.13½	.13¾
Morocco, bags	lb.	.13½	.14
Cuttlefish, Bone Trieste, Straps	lb.	.22	.24
French, boxes	lb.	.22	.23
Powdered, bbls	lb.	.09	.10
Broken, bales	lb.	.07	...
Damiana Leaves, bales	lb.	.15	.16
Dandelion Root, Imp. bags	lb.	.16	.18
Deer Tongue Leaves, bales	lb.	.11	.13
Digitalis Leaves, bales	lb.	.12	.13
Dogwood Bark, Jamaica bags	lb.	.08½	.09½
American bales	lb.	.06½	...
Doggrass Root, USP, cut bags	lb.	.15	.16
Dragons Blood Mass, cases	lb.	.65	.70
Reeds, boxes	lb.	...	1.20
Echinacea Root, bags	lb.	.19	.21
Elcampane Root, bags	lb.	.07	.08
Elder Flowers, bags	lb.	.28	.32
Elemi Gum, 85 lb cases	lb.	.26	.28
Elm Bark, bundles	lb.	.22	.23
Grinding bags	lb.	.13½	.14
Powdered, bbls	lb.	.18	.19
Ephedra Vulgaris, bales	lb.	.07	.08
ERGOT, 150-200 lb bags	lb.	.47	.65
Eucalyptus Leaves, bales	lb.	.05½	.06½
Euphorbia Pilulifera, Herb, bags	lb	.06	.09
Euphorbium Gum, cases	lb.	.14	.20
Fennel Seed, French, bags	lb.	.09	.09½
German bags	lb.	.09	.11
Foenugreek Seed, 200 lb bags	lb.	.04½	.04¾
Fish Berries, 100-125 lb bag	lb.	.06	.07½
Flax Seed, Whole 182 lb bbls		14.50	15.25
Ground, 180 lb bbls	lb.	.06	.06½
Fringe Tree Bark or Root bags	lb.	.18	.20
Fumigating Pastiles, boxes	lb.	.30	.35
Galangal Root, bags	lb.	.08	.09
Galbanum Gum, cans	lb.	.90	1.00
Gamboge Gum, 100 lb cases	lb.	.85	.90
Powdered, cases	lb.	...	1.05
Gelsemium Root, bags	lb.	.07	.08
GENTIAN ROOT, bags	lb.	.07½	.08½
Ground bbls, boxes	lb.	.10	.11
Powdered, bbls, boxes	lb.	.10	.11
Ginger, African, bags	lb.	.10	.10½
Jamaica Grinding bags	lb.	.11	.11½
Cochin ABC & Lemon, bags	lb.	.12	.12½
Ginseng Root, cultivated cs	lb.	8.00	10.00
Wild Southern, cases	lb.	...	16.00
Golden Seal Root, bags	lb.	1.00	1.05
Powdered, boxes	lb.	1.70	1.75
Herb, barrels	lb.	1.25	1.30
Grains of Paradise, bags	lb.	.12	.17
Grindelia Robusta, Herb, bale	lb.	.08	.09
Guaiac Gum, 150 lb cases	lb.	.35	.36
Strained 75 lb cases	lb.	.70	.75
Guarana, tin cases	lb.	1.00	1.25
Hellebore Root, Black, bbls.	lb.	.05½	.06
White, 250 lb bbls	lb.	.07½	.08½
Powdered	lb.	.11	.12
Helonias Root, bags	lb.	.46	.48
Hemp Seed, bags	lb.	.03½	.03¾
Henbane Leaves, USP, bales	lb.	.10	.11
HENNA LEAVES, bales	lb.	.10	.11
Powdered	lb.	.14	.15
Hops, bales	lb.	...	.23
Horehound, Herb, bales	lb.	.07	.08
Hydrangea Root, bales	lb.	...	.07½
IPECAC ROOT, Carteagna, bags	lb.	1.70	1.75
Powdered, 220 lb bbls	lb.	2.05	2.10
Rio Whole, bags	lb.	2.30	2.35
Powdered, 110 lb bbls	lb.	2.50	2.55
Isinglass, American, 130 lb cases	lb.	.95	1.00
Russian (Beluga), boxes	lb.	4.50	...
Jaborandi Leaves, bales	lb.	.10	.10½
Jalap Root, Whole, 150 lb bag	lb.	.20	.22
USP, Powd, 250 lb bbls	lb.	.26	.29
Japan Wax 24 lb cases	lb.	.18½	.19
JUNIPER BERRIES, 125 lb bags	lb.	.05	.05½
Kamala, boxes	lb.	.90	.95
Karaya Gum, Powdered, bbls	lb.	.12	.20
Kava Kava Root, bags	lb.	.13	.14
Kino Gum, Black, cases	lb.	.50	.55
Kola Nuts, 150 lb bags	lb.	.08	.09
Lady Slipper Root, bags	lb.	.55	.60
Larkspur Seed, bags	lb.	.35	.40
Laurel Berries, bags	lb.	.08	.09
Leaves, Greek, bags	lb.	.05½	.06½
Italian, bales	lb.	.08	.09
Lavender Flowers, Ordinary	lb.	.22	.24
Selected	lb.	.32	.33
Lemon Peel, bags	lb.	.09	.10
LICORICE ROOT, Whole bbls	lb.	.12½	.18½
Spanish Natural bales	lb.	.05½	.07
Powdered, bbls	lb.	.09	.10
Selected 2 & 5 lb bdls	lb.	.13	.15
Cutting, 125 lb bags	ln.	.06	.06½
Turkish, 150 lb bales	lb.	.05	...
Linden Flowers with leaves, pales	lb.	.16	.17
Without leaves, bales	lb.	.21	.22
Liverwort Leaves, bales	lb.	.15	.16
Lobelia, Herb, bales	lb.	.10	.11
Seed, bags	lb.	.45	.50
Lovage Root, Imp., bags	lb.	.25	.27
Lupulin N. F., tins	lb.	1.40	1.45
Lycopodium, 88 lb. cases	lb.	.42	.44
MACE SIAUW, No. 1, cases	lb.	.50	.51
Banda No. 1, cases	lb.	.58	.60
Batavia No. 2, cases	lb.	.35	.36
Malva Flowers, Blue, bales	lb.	.40	.42
Black, bales	lb.	.28	.43
Leaves, bales	lb.	.13	.14
Manaca Root, bales	lb.	.30	.31
Manna, Large Flake, cases	lb.	.65	.67
Small Flake, cakes	lb.	.40	.48
Sorts, cases	lb.	.45	.50
Mandrake Root, bags	lb.	.10	.11
Marjoram, Herb	lb.	.18	.18½
French, No. 1 bales	lb.	.16	.17
German, bales	lb.	.65	.70
Mastic Gum, 120 lb cans	lb.	.18	.21
Matico Leaves, bales	lb.	.15	.16
Mezereon Bark, bags	lb.	.02½	.03
Millet Seed, Yellow, bags	lb.	.06½	.07
Montan Wax, Crude, bags	lb.	.25	.28
Bleached, bags	lb.	.10	.12
Moss, Iceland, bales	lb.	.11½	.14½
Irish, Bleached, bales	lb.	.85	.87
Mullein Flowers, tins	lb.	.07½	.08
Leaves, bales	lb.	.07½	.08½
Musk Root, Russian, bags	lb.	.20	.22
Myrrh Gum, 200 lb, cases	lb.	.22	...
Nutgalls, Chinese, bags	lb.	...	Nom.
Aleppy, bags	lb.	.23	...
Powdered, bags	lb.	.16½	.17
Nutmegs, 110's cases	lb.	.19	.20
75's & 80's cases	lb.	.19	.20
Grinding, bags	lb	.05	.06
NUX-VOMICA Buttons, bag	lb.	.08	.09
Powdered, 200 lb bbls	lb.	.06	.06½
Oak Bark, bags	lb.	.10	.11½
Olibanum Gum, 280 lb cases	lb.	.25	.26
Siftings	lb.	.17	.19
Tears, No. 1 Extra	lb.	.14	.16
No. 2	lb.	12.00	13.00
No. 3	lb.	13.00	14.00
Opium Gum, USP, cases	lb.	13.00	14.00
Granular, cans	lb.	.30	.35
Powdered, USP, cans	lb.	.09	.10
Orange Flowers, cases	lb.	.09	.10
Peel, Bitter, bags	lb.	.16	.17
Sweet bags,	lb.	.19	.21
ORRIS ROOT, Flor. bid. bags	lb.	.13	.14
Powdered, 200 lb bbls	lb.	.18	.19
Verona, bags	lb.	.95	1.00
Powdered, 200 lb bbls	lb.	...	...
Fingers, boxes	lb.	.24	.25
Ozokerite Wax, Brown, Hard	lb.	.30	.31
Bags	lb.	.37	...
Green, Hard, bags	lb.	2.35	2.40
Yellow, Refined, bags	lb.	2.50	2.55
Papain, Crude, 150 lb cases	lb.	.21	.21½
Pure, Powdered, 10 lb bot	lb.	.14	.15
Paprika, bags	lb.	.15½	.16½
Pareira Brava Root, bags	lb.	.20	.21
Passion Flower, bales	lb.	.07	...
Patchouli Leaves, bales	lb.	.20	.21
Pennyroyal, Herb, 100 lb bags	lb.	.20	.21
Leaves, 100 lb bags	lb.		

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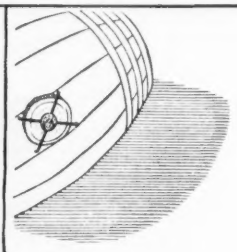

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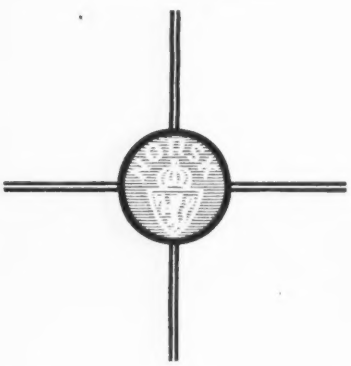

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PEPPERMINT LEAVES, Imp bales	lb.	.65	.75
Domestic, bales	lb.	.28	.29
Pichi Leaves, bags	lb	.11	.12
Pimento Select, bags	lb.	.10	.10½
Pink Root, True, bags	lb.	.42	.44
Pleurisy Root, bags	lb.	.19	.20
Poke Berries, bags	lb.	...	.18
Root, 200 lb bales	lb.	.07	.07½
Pomegrant Bark of Root, bags	lb.	.30	.35
Bark of Fruit, bags	lb.	.25	.30
Bark of Tree, bags	lb.	.18	.22
POPPY FLOWERS, Red, bags	lb.	.45	.50
Prickly Ash Bark	lb.	.14	.17
Southern bags	lb.	.11	.11½
Northern, bags	lb.	.15	.16
Berries, bags	lb.	.21	.22
Prince's Pine, bales	lb.	.18	.23
Psyllium Seed, Black, bags	lb.	.34	.37
Pulsatilla, Herb, bags	lb.	.11	.12
Pumpkin Seed, bags	lb.	.12	.13
Pyrethrum Flowers	lb.	.15	.16
Pwd., pure, 200 lb.bbls.	lb.	.22	.23
Quassia Chips, bags	lb.	.06½	...
Quebracho, bulk, 125 lb. bbl.	lb.	.30	.31
Quince Seed, bags	lb.	1.50	1.60
Persian, bags	lb	1.95	2.00
Rape Seed, South American, bags	lb.	.05½	.06
Dutch, bags	lb.	.06	.06½
Raspberries, Dried, bbls	lb.	.75	.80
Red Saunders, bags	lb.	.08	...
Rhatany Root, bags	lb.	.10	.11
Rhubarb Root, HD, cases	lb.	.16	.17
Powdered, bbls.	lb	.21	.23
Rosemary Leaves, bales	lb.	.05	.05½
Flowers, cases, bales	lb.	.25	.30
Rose Petals, pale	lb.	.20	.21½
Red	lb.	.70	.75
Rue, Herb, bales	lb.	.18	.20
Sabadilla Seed, bags	lb.	.21	.22
Powdered, bbls	lb.	.26	.27
SAFFRON FLOWERS, American, bales	lb.	.24	.25
Valencia, 1 lb cans	lb.	10.75	11.00
Sage Dalmatian, bales	lb.	.05½	.06
Sandarac Gum, 300 lb bbls.	lb.	.35	.40
Sarsaparilla Root, Honduras, bales	lb.	.38	.39
Mexican, bales	lb.	.18	.20
Sassafras Bark, Ordinary, bales	lb.	.10	.12
Select, bales	lb.	.17	.19
Savory Leaves, bale	lb.	.07½	.08
Saw Palmetto Berries, bags	lb.	.07½	.08½
Scammony Resin, boxes	lb.	1.30	1.35
Root, bags	lb.	.08½	...
Senega Root, bags	lb.	.65	.70
SENNA ALEX., 150 lb cases	lb.	.25	.30
Half leaf 150 lb cases	lb.	.12½	.14½
Sifting, 400 lb bales	lb.	.11	.11½
Tinnevelly, Bold, 350 lb bales	lb.	.16	.18
Medium Leaf	lb.	.11	.12
Small Leaf	lb.	.07	.09
Pods, 350 lb	lb.	.07	.07½
Powdered, 200 lb	lb.	...	.10
Serpentaria Root, bags	lb.	.42	.45
Simaruba Bark, bales	lb.	.25	.27
Skullcap Leaves, Eastern, bales	lb.	.50	.55
Western, bales	lb.	.30	.31
Skunk Cabbage, Striped, bales	lb.	.12	.14
Snake Root, Canada Natural, bags	lb.	.26	.27
Canada, Stripped, bags	lb.	...	.50
Soap Bark	lb.	.12	.13
Cut, 125-175 lb bags	lb.	.08½	.09
Crushed, 200 lb bbls.	lb.	.16	...
Powdered, bbls.	lb.	.12	.13
Spearmint Leaves, American, bales	lb.	.25	.26
Spermaceti, blocks, cakes, cases	lb.	.32	.35
Spikenard Root, bags	lb.	.13	.13½
Squaw Vine, bales	lb.	.14	.15
Squills, White	lb.	.05½	.06½
Powdered, bulk	lb.	.23	.25
Stavesacre Seed, bags	lb.	.14	.15
Stillingia Root, bags	lb.	.08	.09
Stone Root, bags	lb.	.08	.09
St. Ignatius Beans, bags	lb.	...	Nom.
St. John's Bread, bags	lb.	...	.09
STRAMONIUM LEAVES, bales	lb.	.12	.14
Seed, bags	lb.	.07½	...
Strophanthus Seed, Kombe, bags	lb.	2.00	2.25
Styrax Liquid, Artificial	lb.	.26	.35
Genuine, USP	lb.	.38	.43
Sunflower Seed, bags Calif	lb.	.04½	.05
South American, bags	lb.	.07	.07½
Tamarinds, bbls	lb.	.07	.08
Kegs	keg	3.85	...
Tansy, Herb, bales	lb.	.14	.15
Thus Gum, 280 lb bbls	lb.	.08	.17
THYME, Spanish, bales	lb.	.08	.08½
French, bales	lb.	.07	.07½
Tonga Root, bundles	lb.	.25	.26
Bark, bundles	lb.	.25	.26
Tonka Beans, Angostura Cases		1.75	1.85
Para cases	lb.	.90	...
Surinam cases	lb.	1.00	1.10
Tragacanth Gum, No 1, 100 lb. cases	lb.	1.45	1.50
No. 2	lb.	1.30	1.40
No. 3	lb.	1.10	1.20
Powdered, 50 lb boxes	lb.	.85	.95
Turkish cases	lb.	.50	.90
Turmeric Root Madras, bags	lb.	.07½	.08½
Aleppy bags	lb.	.07	.07½
Powdered	lb.	.13	.15
China bags	lb.	.11	.12
Turpentine Venice True, 80 lb cases	lb.	.32	.40
Artificial, 80 lb cases	lb.	.17	.18
Uva Ursi Leaves, bales	lb.	.05	.05½
Valerian Root, Belgium bags	lb	.11	.13
VANILLA BEANS, Mexican, whole, cases	lb.	3.75	4.25
Cuts, cases	lb.	2.50	2.65
Bourbon, cases	lb.	.85	1.45
Vetivert Root, 100 lb bags	lb.	.25	...
Violet Flowers, bags	lb.	1.00	1.05
Wahoo Bark of Root, bags	lb.	.42	.45
Bark of Tree, bags	lb.	.20	.21
White Pine Bark, Roseed, bags	lb.	.06	.08
White Poplar Bark, bags	lb.	.06	.07½
Wild Cherry Bark, Natural thin, Green	lb.	.09	.10
Rossed bales	lb.	.11	.12
Thick Rossed, bales	lb.	.08	...
Wild Indigo Root, bags	lb.	.13	.14
Willow Bark, bags	lb.	.05	.05½
White, bags	lb.	.15	...
Witch Hazel Bark, bags	lb.	.05	.06
Leaves, bales	lb.	.07	.08
Wormseed, American, bags	lb.	...	.08
Wormwood, Herb, Imp., bales	lb.	.08	.08½
Yellow Dock Root, bags	lb.	.08	.09
Yerba Mate, bags	lb.	.25	.27½
Santa, bags	lb.	.09	.10½

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Index to Advertisers

Abbott Laboratories, No. Chicago, Ill. 294
Alsop Engineering Co., New York ..... Cover 2
American Potash & Chemical Corp., New York 298
Anchor Cap & Closure Corp., Long Island City, N. Y. 214
Armstrong Cork Co., Lancaster, Pa. 219
Art Tube Co., Irvington, N. J. 278

Bakelite Corp., New York ..... Insert facing 216
Baker & Bro., H. J., New York 308
Bond Manufacturing Corp., Wilmington, Del. 274, 286
W. J. Bush & Co., Inc., New York 294

California Fruit Growers Exchange, Ontario, Cal. 304
Coignet Gelatines, New York 298
Colgate-Palmolive-Peet Co., Chicago, Ill. 298
Colton Co., Arthur, Detroit, Mich. 274
Consolidated Products Co., New York 310
Crown Cork & Seal Co., Baltimore, Md. 266

Dodge & Olcott Co., New York 211
Dow Chemical Co. Midland, Mich. . . Inserts between 216 & 217
Dreyer Inc., P. R., New York 292, 308

Exposition of Chemical Industries, National, New York 217

Franco-American Chemical Works, New York 264
Fritzsche Brothers, Inc., New York 260

General Felt Products, Inc., Brooklyn, N. Y. 215
Givaudan-Delawanna, Inc., New York 258
Greeff & Co., Inc., R. W., New York 302
Gutmann, Ferdinand & Co., Brooklyn, N. Y. 276

A. K. Hamilton, New York 264
Harshaw Chemical Co., Cleveland, O. 311
Heyden Chemical Corp., New York 282
Hoffmann-La Roche, Inc., Nutley, N. J. 284
Hopkins & Co., J. L., New York 309

Industrial Chemical Sales Co., Inc., New York Insert facing 217

Kiefer Machine Co., Karl, Cincinnati 273
Kranich Soap Co., Inc., Brooklyn, N. Y. 298

Leonhard Wax Co., Inc., Theodor, Paterson, N. J. 296
Liquid Carbonic Corp., Chicago, Ill. 269

Magnus, Mabee & Reynard, Inc., New York 213
Mallinckrodt Chemical Works, St. Louis 222
Malyne, Les Parfums de, Grasse, France 312
Merck & Co., Inc., Rahway, N. J. 288
Mixing Equipment Co., Inc., Rochester, N. Y. 276
Monsanto Chemical Works, St. Louis ..... Insert facing 256

National Adhesives Corp., New York 276
New England Collapsible Tube Co., New York 221
Newport Chemical Works, Inc., Passaic, N. J. 262
N. Y. Quinine & Chemical Works, Brooklyn, N. Y. 300
Norwegian Cod Liver Oil Ass'n, Norway 308

Owens-Illinois Glass Co., Toledo, Ohio 218

Pacific Coast Borax Co., New York 296
Package Machinery Co., Springfield, Mass. 272
Parsons, M. W., New York 298
Penick & Co., S. B., New York 294
Pennsylvania Sugar Co., New York 264
Pfizer & Co., Chas., Inc., New York ..... Cover 4
Phoenix Hermetic Co., Chicago, Ill. 220
Plaimar, Ltd., Perth, Western Australia 304
Powell & Co., Inc., John, New York 286

Rossville Commercial Alcohol Corp., Lawrenceburg, Ind., Cover 3

Schering Corp., New York 288
Schliemann Companies, Inc., New York 302
Spring Stopper Co., New York ..... Insert facing 280
Stanco Distributors, Inc., New York 293
Stokes Machine Co., F. J., Philadelphia 270
Stokes & Smith Co., Philadelphia, Pa. 272
Sturge, John & E., Birmingham, England 281
Sun Tube Corp., Hillside, N. J. ..... Cover 1

Todd Co., A. M., Kalamazoo, Mich. 292

Ungerer & Co., New York 290
United Chemical & Drug Corp., Bridgeport, Conn. 306
U. S. Bottlers Machinery Co., Chicago, Ill. 209

van Ameringen-Haebler, Inc., New York . . Inserts bet. 256 & 257

White Metal Mfg. Co., Hoboken, N. J. 216
Will & Baumer Candle Co., Inc., Syracuse, N. Y. 296
Wilson Laboratories, Chicago, Ill. 309
Wirz, Inc., A. H., Chester, Pa. ..... Insert facing 257